

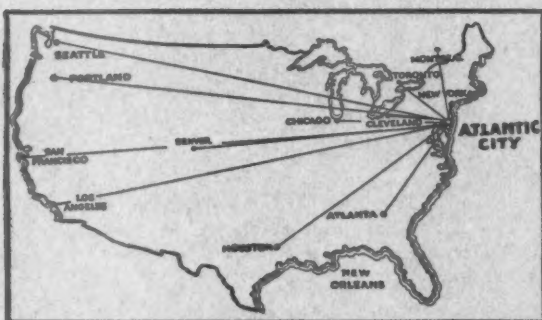
AMERICAN GAS ASSOCIATION MONTHLY



Vol. VIII

No. 10

OCTOBER, 1926



All Roads Lead to Atlantic City
The Week of October 11-15

EIGHTH ANNUAL CONVENTION
AMERICAN GAS ASSOCIATION



Your Business
Success Depends
On Your
Answer to
These Two
Questions

ARE YOU SATISFIED? —WILL YOU BE SATISFIED?

If you are trying to get a correct perspective of your present position, ask yourself what the year 1927 offers—and the prospects of what the year 1937 will have in store.

If you are fair to yourself, you will probably be content with the progress you are making and intend to make—but only to a certain degree. That uneasy urge to do more, to be more, is ambition—the yearning to come out on top. Here is your chance to satisfy that uneasy urge.

Uncle Sam, Columbia University and the American Gas Association have gotten together to bring their services to your door—for your benefit—in a comprehensive, 24-lesson correspondence course, covering all the technical phases of gas company operations, including manufacture, distribution and utilization, also treating such general subjects as rate making, public relations, etc.

This is an opportunity for YOU—regardless of your previous education. More than 900 gas men are taking the course now, and it is only a year old.

The course is under the personal supervision of Professor Jerome J. Morgan of the Chemistry Department, Columbia University, New York, N. Y. Inquiries and requests for application blanks may be addressed either to Professor Morgan or to Kurwin R. Boyes, secretary, Committee on Education of Gas Company Employees, American Gas Association, 342 Madison Avenue, New York, N. Y. Price of the complete course, including text material, is sixty dollars (\$60), payable to Columbia University upon enrollment.



AMERICAN GAS ASSOCIATION MONTHLY

342 MADISON AVENUE, NEW YORK, N. Y.

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\$3.00 PER YEAR

For statements and opinions contained in papers and discussions appearing herein, the Association does not hold itself responsible.

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Our Own Who's Who



XVII

Oscar H. Fogg



BORN in Philadelphia, Pa.; educated in public schools of that city. Entered employ of United Gas Improvement Co. as office boy; later became cadet engineer at Yonkers plant of that company. In 1901 became superintendent of Newton and Flushing Gas Co., Flushing, L. I. Had charge of construction of new gas works system at Ocean City, N. Y., and after its completion was in charge of operation. Entered employ of Consolidated Gas Co. of New York in 1904, in department of mains and services, and continued as engineer of department until 1910, when he was assigned to special research, including investigation of gas-making processes, utilization of by-products, etc. Made study of utilization methods in Europe and United States. In 1912 was appointed engineer of utilization, organizing utilization department and continuing as its head until 1917 when he left to enter the army. Was engaged in design of plants for repair and maintenance of ordnance material in France, and recruiting, organizing and training of enlisted and commissioned personnel. Later was engaged with troops in the construction of ordnance stations in France, and finally was in command of the Construction and Maintenance Division of the Ordnance Department, A.E.F., having then been promoted to the rank of Lieutenant Colonel. For exceptionally meritorious service, he received the French decoration of the Ordre de l'Etoile Noire, and the Distinguished Service Medal of the United States Government. On his discharge from the Army in 1919, Colonel Fogg was appointed secretary-manager of the American Gas Association. In November, 1924, returned to the Consolidated Gas Company as vice-president in charge of commercial relations, customers' service, and utilization. Is vice-president elect of A. G. A. for 1926-27.

AMERICAN GAS ASSOCIATION MONTHLY

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The Convention of Conventions

**Largest and Best Convention Ever Held by
American Gas Association Starts October 11**

THE stage is prepared for the Eighth Annual Convention of the American Gas Association. The meeting on the Million Dollar Pier the week of Oct. 11-15 will be the largest in point of attendance and the most important ever held by the gas industry. An exceptionally fine program, made up of speakers of national note and famed for their ability along their respective lines, has been arranged. The entertainment features will be of the usual high order, and in addition the following innovations will make convention attendance even more pleasant than ever before. No printed reports read at general sessions; general sessions to be but two hours long; ample space facilities for the exhibition and meeting places.

Although the complete program of the Public Relations Symposium has not been announced as yet, it is known that Miss Anna Case, nationally famous soprano, will furnish the entertainment. In addition, Henry G. Wells, member of the Massachusetts Public Utilities Commission, will speak to the members on "The Regulation and Management of Gas Companies." Frank Milhollan, president, Board of Railroad Commissioners, North Dakota, will also address the symposium.

James O'Shaughnessy, executive secretary, American Association of Advertis-

ing Agencies, New York, N. Y., will speak at the first general session on national advertising. He is taking the place of Edw. S. Jordan, who will be unable to be in Atlantic City.

Announcements of an important nature will be included in the convention program which will be distributed at the Registration Desk when the delegates register.

The entire industry is awaiting the signal "go" that will start the Eighth Annual Convention, for it is certain that no other gathering has ever had so much in store for those attending.

For the first time no printed reports will be read from the platform during the general sessions. All reports of general committees, etc., will be printed in advance and distributed from the Registration Desk at the time of registration.

A brief resumé of each report will be given from the platform. Not only will this procedure lighten the general sessions and tend to make the order of business more interesting, but it will also give the members ample opportunity to read and digest the contents of the reports at a more favorable time.

The Registration Desk is located at the boardwalk entrance to the Million Dollar Pier, on the left hand as one enters. An Information Desk has been provided for the convenience of the members and their guests.

Since admission to all meetings and functions is by convention badge only, all members and guests are requested to wear their badges all the time.

The registration fee for members will be the same as it has been in the past, \$2.00. However, the registration fee for non-members will be \$3.00.

The following are the meeting rooms for the various meetings:

The Hippodrome on the Million Dollar Pier will be used for all general sessions, and the public relations symposium. This room is slightly elevated above the main floor, and is easily reached by means of two conveniently placed ramps. It is situated in the center of the Pier.

The Technical Section will meet in the Hippodrome.

The Industrial Gas Section will convene in Meeting Room B, near the Ocean end of the Million Dollar Pier.

The Commercial Section will meet in Meeting Room C, at the Ocean end of the Pier.

All evening entertainment functions will be held in the Ballroom, just off the boardwalk.

The Accounting Section meetings will be held in the Rose Room of the Traymore.

The Publicity and Advertising Section will hold its Conference on National Advertising in the Belvedere Room of the Hotel Traymore.

Register early and avoid the rush.

Gas Sales Increase

ONE hundred and sixty-four per cent more gas for house heating was sold by the Public Service Company of Northern Illinois in 1925 than in 1924, according to a report issued recently. The sales of gas for industrial heating processes increased 30.6 per cent over the previous year.

The Workshop of America

THE Workshop of America," a community located chiefly in Northern Indiana and Western Ohio and known by this name because of its industrial development, used 7,516,182,600 cubic feet of gas in 1925, an increase of 20.27 per cent over 1924.

Champion Pie Baker Uses Gas for Cooking

WITH a record of approximately 40,000,000 pies to his credit, Richard Webb, of Toledo, Ohio, is said to be the champion pie baker of America. Webb, according to the American Gas Association, has been baking pies for 39 years and has averaged more than 3,000 pies a day during this period. Some days production has run at the rate of 11,000 pies a day.

Webb was born in Brighton, England, in 1858. He came to the United States in 1881 and went to work with a Toledo baking concern. The oven he uses for pie baking is a gas-fired, rotary brick oven, 20 feet in diameter, 8 feet high, with a concrete foundation 7 feet deep. The walls of the oven are more than 2 feet thick and the entire structure contains as many bricks as a fair-sized brick house.

TELL THE WORLD!

DO you know that an A. G. A. Convention gives you an unexcelled opportunity for constructive publicity for your company?

Make it a point this year to get your newspaper editors interested. First, give them an interview *before* you leave for Atlantic City. Tell them who is going and why. Then give them an interview *after* you return home.

At both interviews concentrate on those subjects which will interest the greatest number of gas users.

Among developments capable of news treatment are:

Laboratory-approved appliances, house heating, incineration, home service work, automatic hot water service, oven-regulated meals, refrigeration, industrial gas—to mention only a few.

Get local publicity for yourself and your company out of the 1926 Convention. And make your plans for getting it right now.



Air view showing the grounds of the Sesqui-Centennial Exposition

The Gas Man's First Unofficial Convention

The Migration from Atlantic City to Philadelphia on
October 16 Will Be More or Less General

WHEN the American Gas Association announced the dates of the Eighth Annual Convention as October 11 to 15, no thought was given to the Sesqui-Centennial Exposition at Philadelphia. It has been predicted, however, that the 16th and 17th of October would witness another gathering of the gas men at Philadelphia. The official convention will be over Friday afternoon, as usual, and then the unofficial convention will begin at the city of good fellowship.

Of course there is a great deal at the Sesqui to interest every American. There is even more to interest the gas man, for the gas industry is connected with the Exposition more than any other public

utility, and possibly more than any other industry.

It is a matter of history that almost the first commercial effort to market gas stoves was made at the Centennial Exposition in Philadelphia in 1876. At that time, electricity for lighting was in its infancy and the incandescent lamp was unknown. Practically all the illumination was by means of gas, although no effort was made to keep the Exposition open at night.

Fifty years later, at the Sesqui-Centennial celebration, it has been found necessary to provide gas facilities equal to those for a small city, running special mains to furnish the various services



© Herbert Photos

The huge prismatic lens, now on exhibition at the Sesqui, has been in continuous service at the Navesink Lighthouse for ninety years. It is illuminated by three gas mantles, supplies a million candle power and is visible from twenty to sixty miles, depending on the atmospheric conditions

needed. This in itself is expensive, in that so much of the grounds upon which the Exposition is located consisted of filled land (bed springs and old concrete forming a large part) that all work had to be done by hand instead of by machine as is usually the case. Practically 32,000 lineal feet of mains have been laid, of which 7200 feet were of 12-inch size.

Two buildings alone have 400 gas outlets in each, and in the Stadium a four-inch line 1500 feet long was needed to furnish the necessary appliances, including water heaters, gas ranges and hot dog sandwich machines. It is said that a Philadelphia packer paid \$300,000 for the exclusive privilege of selling frankfurters to visitors. He uses a machine in which rolls, frankfurters and mustard are stored in large quantities. The frankfurters are automatically cooked by gas, and the insertion of a dime brings out the completed sandwich.

All the restaurants, lunch stands and cafes on the ground use gas for cooking, and many gas-fired heaters furnish hot water.

One exhibitor, a manufacturer of concrete blocks, uses hot water in mixing concrete and claims this is the secret of the high quality of his product.

The list of A. G. A. members exhibiting at the Sesqui is given below:

- American Radiator Company, 25th & Reed Sts., Philadelphia, Pa.
- Roberts & Mander, 11th & Washington Ave., Philadelphia, Pa.
- Ruud Manufacturing Company, Pittsburgh, Pa.
- Sterling Range & Furnace Corp., Rochester, N. Y.
- Remington Typewriter Co., 374 Broadway, New York, N. Y.
- Holyoke Heater Co., Holyoke, Mass.
- United Utilities and Engineering Corp., 2220 Chestnut Street, Philadelphia, Pa.
- Public Service Stock & Bond Co., N. Canal & Pine Sts., Newark, N. J.
- U. S. Cast Iron Pipe & Foundry Co., Burlington, N. J.
- R. D. Wood & Company, 400 Chestnut Street, Philadelphia, Pa.
- Crane Company, 836 S. Michigan Ave., Chicago, Ill.
- Bristol Company, Waterbury, Conn.

The Exposition reflects not only the place at which the United States has ar-



The symbol of the exposition

rived in modern civilization but also offers opportunity for a survey of the industrial and cultural attainments of a number of other nations.

Among the exhibits are those from Great Britain, France, Holland, Sweden, Denmark, Spain, Austria, Hungary, Czecho-Slovakia, Turkey, Tunisia, Egypt, Palestine, China, Japan, India, Persia, Argentina, Cuba, Haiti, and other countries.

The Exposition site is in the southern part of Philadelphia, adjoining the League Island Navy Yard, and as that is also thrown open to the public as an important part of the Government exhibits, the area covered may be considered as 2000 acres.

Five huge exhibition palaces, a large auditorium, the colossal Sesqui-Centennial Stadium, a 170-foot Tower of Light, some fifty buildings of varying sizes and architecture, and about 250 pavilions, booths and stands, compose the structural features of the scene that greets the visitor.

The number and variety of exhibits may be inferred from the dimensions and titles of the main exhibition palaces. They are: The Palace of Liberal Arts and Manufactures, 964 feet long by 392 feet wide, providing seven and three-quarters acres of exhibition space; the Palace of Agriculture, Food, Civic and Foreign Exhibits, 970 feet by 460 feet, eight and a



The Avenue of the Colonies at the Sesqui-Centennial Exposition

half acres of space; the Palace of United States Government, Machinery, Mines, Metallurgy and Transportation, 880 feet by 400 feet, seven and one-half acres; the Palace of Education and Social Economy, 524 feet by 208 feet, two and one-half acres; the Palace of Fine Arts, 496 feet by 260 feet, two acres of space. Another exhibition structure of imposing dimensions is the Pennsylvania State Building.

Exhibits from foreign countries not represented by their own buildings, and also those prepared by commercial organizations, civic bodies and some of the states, are housed in the Palace of Agriculture, Food, Civic and Foreign Exhibits.

In this palace are also numerous exhibits of all things edible, covering methods of cultivation and preparation for market, proper selection and preparation of foods, and offering opportunities for the examination of many kinds of tea, coffee, cocoa, and other beverages; new condiments and desserts, yeast and baking powder, confectionery; health foods, groceries, and a number of other commodities that make up the daily meals of civilized man.

In the Palace of Liberal Arts and Manufactures are exhibits that bring the visitor in touch with the latest mechanical inventions for the facilitation of both his business transactions and his home com-



Interior view of the U. S. Gov't Palace of Machinery, Mines, etc.



At the Sesqui is the splendid reproduction of Sulgrave Manor House, which is the old home in England where George Washington's ancestors lived for many years. It is a faithful reproduction in every detail, having been made from exact measurements. The one room in Sulgrave Manor which has not completely retained the quaint, old-fashioned atmosphere is the kitchen—which is equipped with a gas range.



In striking contrast to the Sulgrave Manor House is the "Save the Surface" Model Home—exhibited by the paint and varnish industry. At the left above is the Sulgrave Manor House; at the right above is the "Save the Surface" Home; below is the kitchen of "Save the Surface" Home—a similar one is installed in Sulgrave Manor.

fort. There are typewriters, tabulating, calculating, card-sorting and dictation machines; time, cost and door recorders; ticketographs; scales for every purpose;

spice and coffee mills, slicing apparatus, cash registers, stationery, fountain pens and improved pencils, and numerous other first-aids to commercial efficiency.

Good For Man or Beast, It Seems

IT is usually stated in connection with demonstrations of life saving that the prone pressure method is good for electric shock, gas asphyxiation, drowning and traumatic shock. Rescues in the first three types are common, but its use for traumatic shock is not generally known or appreciated. Traumatic shock is simply the condition of a man who has had the breath knocked out of him because of a fall, an automobile collision, etc. Such a case happened at Long Branch, New Jersey, not long ago.

Frank Carey, one of the linemen of the Jersey Central Power and Light Company, while trimming a tree in Long Branch, climbed out too far on one of the limbs, which

broke with him and let him fall to the ground. It is reported that he turned over in the air and landed with terrific force on his stomach and chest. His fellow workers examined him and found him to be unconscious and without any sign of breath.

A fellow employee immediately started prone pressure resuscitation, but he was relieved by another as he left to get some ammonia inhalant. The second employee in turn was relieved by another. After five or six minutes it was noticed that the patient was breathing, but with much difficulty.

The company doctor, who arrived at this point and had Carey removed to the hospital, states that there is no doubt but what this man's life was saved by the good work of these three workmen.

Forty-one Automatic Gas Water Heaters in 22 Buildings—at the Sesqui

Records Show That the Ideal Fuel Is the Only Fuel
When It's a Question of Heating Water

By M. M. SCOTT

Ruud Manufacturing Company, Pittsburgh, Pa.

FLOODLIGHTED pastel tints turn the night into a vast rainbow, myriad globes banish darkness in the Gladway and guide languorous gondolas through the Lagoon's mazes. Electricity serves at the International Sesqui-Centennial Exposition—*spectacularly*.

Less spectacularly, perhaps, but quite as efficiently, gas is doing its part to minister to the comfort and convenience of Sesqui-goers. Gas is doing a big job at the Quaker City "Show of the Century" and, as always, doing it without the blare of trumpets or waving of flags. Gas was on the job May 29th, two days before the official opening of the Exposition, and it is a matter of official record that the United Gas Improvement Company was the *only* company that completed its work ahead of schedule time.

Gas, the ideal fuel, is the Centennial's standby for cooking, for building-heating and for water heating. Gas is cook-the meals served at the Japanese Tea Room, at the India Restaurant, at the Y.W.C.A. Cafeteria, at Mueller's Restaurant, at the Russian Tea Room, and at the Cafe de la Paix—gas is making millions of hot dogs and barbecue sandwiches edible at the countless quicklunch stands so necessary to pleasure-going America's "gastromaniacs." Gas in feeding the inner man undertakes a real task in itself, for sight-seeing pedestrianism brings hunger on apace and the tired vacationist knows no stint when lunch and dinner time roll around.

But gas has even a greater accomplishment to its credit at the Sesqui in heating the thousands of gallons of water needed constantly. "Gas, the ideal fuel for water heating," familiar to D X fans, has been universally approved by exposition engi-

neers so that the gas man will find, if he essays an inspection trip, 22 buildings served with gas hot water by 41 automatic gas water heaters.

Gas is washing dishes at all the restaurants; gas provided the sinews for a million cups of coffee; scrubwomen send a vote of thanks to the gas industry for an automatic, never-failing supply of hot water; tired booth attendants find renewed vigor in gas hot water, and too, we find gas heated water being used directly in the manufacture of concrete blocks right on the Centennial grounds.

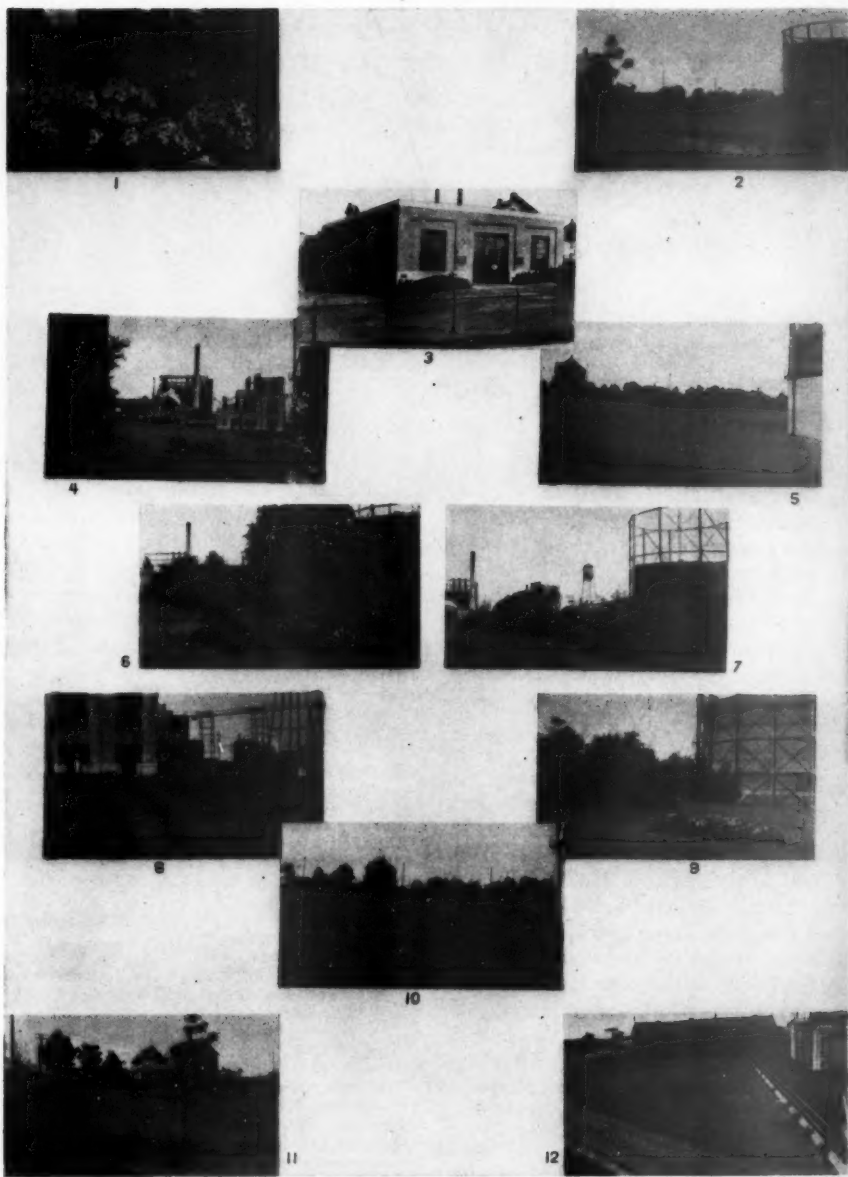
Automatic gas hot water is saving time, labor and expense at the Sesqui just as it is doing in thousands of American homes, factories, stores and institutions. Read the Sesqui Roster. A simple list of installations at the greatest of all American expositions is a self-explanatory proof that "You Can Do It Better With Gas":

Independence Hall
Palace of Liberal Arts and Manufactures
Administration Bldg.
Nuremberg Market Place
Auditorium
Tower of Light
Building No. 2
Palace of Education
India Restaurant
United States Government Transportation
Mine and Metallurgy Building
Y.W.C.A. Cafeteria
New Jersey Building
Mueller's Restaurant
Illinois State Building
Emergency Hospital
Coast Guard Barracks
Japanese Tea Room
Russian Tea Room
Treasure Island
Spanish Building
Cafe de la Paix
Palace of Fine Arts

The above buildings contain the following:

- 1 Ruud Automatic Storage System
- 1 Ruud Automatic Storage System
- 2 Ruud Automatic Storage Systems

(Continued on page 602)



1: Close-up of beds. 2: View of grounds just east of 2,000,000-foot holder. 3: View of new garage. 4: View of portion of the Charles Street Plant. 5: Another view of the lawn, looking toward adjacent private property. 6: Close-up of shrubbery partially surrounding a gas holder. 7: View showing effect of shrubbery in softening the hard, straight lines of one of the gas holders. 8: Another portion of the plant. 9: View showing the pleasing effect of flowers, shrubbery and lawn. 10: Lawn and flower beds. 11: Looking south across lawn toward adjacent private property. 12: Lawn just south of purifier boxes at Charles Street

Why Not Make the Gas Plant Beautiful?

The Effect on the Employee and the Public Is Well
Worth the Effort and the Expense Entailed

By C. C. CURTIS

Vice-President and Manager, Fall River Gas Light Co.

TOO often, it seems to me, we are inclined to feel that a choice must be made between beauty and utility, when, as a matter of fact, both attributes may and do exist together harmoniously and effectively.

The old time "chestnut" about the well dressed city man with beautiful and expensive tackle who caught no fish, while the ragged, freckled, farmer boy with a hickory pole, string and bent pin pulled in one a minute, usually makes a hit with a certain portion of the audience, but is often overdone. It is true that the finest fishing tackle in the world will not entirely compensate for lack of knowledge and skill on the part of its user, but neither are all dirty urchins good fishermen. When you combine skill, knowledge and beautiful tools, maximum results are secured, and I'll back the experienced (even though well-dressed) fisherman with Leonard rod, Hardy reel and Scotch flies against the story book bent pin, dirty boy outfit any time.

In the same way I see no reason why the gas works should forever be associated in the average citizen's mind with squalid surroundings, tumbled-down tenements, dirty children, "speak-easies," and the supposed wickedness of the "gas house gang." Certainly the personnel of a gas works with its high grade men, surpassed in intelligence, education, technical training, skill and loyalty by no other group in utility or industrial plants, does not deserve to be so regarded.

Theoretically it is possible that men may do just as efficient work in a dirty plant amid ugly surroundings, but I am thoroughly convinced that they do not. Certainly they must have proper light, tools, and other equipment. Why not go even further than improving conditions

on the inside of the retort house, the generator house, the machine shop, etc., and make the whole plant attractive and even beautiful in the eyes of employees and public alike, so that it may become one of the real show places of the city. That is our aim, to have the gas works property look as much like a park or beautiful estate as is consistent with thrifty and economical management.

The Fall River Gas Works is particularly fortunate in having as the site of its manufacturing plant a plot of land in the southern part of the city sloping toward the railroad tracks and Mount Hope Bay on the west, with Bay Street, a main thoroughfare on the east, and two stub end streets on the north and south. No finer location could have been selected and the plot of land offers wonderful landscape gardening possibilities. A coal gas plant was erected on this site in 1914 and a water gas plant was added in 1922. After construction work was finished in 1923, the upper or eastern part of the property was a distinctly unattractive piece of ground, as it was ungraded and covered with the old construction shanties.

The shanties were torn down, and during 1924 and 1925 about \$4,500 was expended in digging out boulders, rocks and other debris, plowing, fertilizing, seeding, etc. A considerable part of this expense would have been necessary in any event in order to prevent heavy rains from washing the soil away and partially flooding the generator house floor. The results may be judged by comparing the pictures taken this year with others taken in 1923 and prior years. Some old wooden buildings still remain from the construction period, but these are on the southwestern portion of the property where they are not particularly conspicu-



View of the Charles Street plant as it appeared in 1922—before the work of beautifying the grounds had been begun

ous. They are used for storage purposes, and will be until such time as we feel financially able to tear them down and build a modern brick storeroom. However, they have been painted and surrounded, where possible, by hedges, well-mowed lawn, rose bushes, etc.

One thing of which we are particularly proud is the color of the large two million cubic foot holder located on this plot of land, known as the Charles Street Works. After long and careful thought, together with experiments and further study, this holder was painted an attractive shade of dark green so as to reduce visibility and glare and make it harmonize with buildings, trees, grass and shrubs.

Of course, we have not neglected our property in other parts of the town. The general office building for many years has presented a most attractive and artistic appearance inside and out, such that we are not ashamed to have it compared with others no matter where they may exist. Gas men who come to Fall River usually comment on it with expressions of admiration or envy, and sometimes both.

During the past year at our distribution headquarters at Fifth Street, an old brick gas holder house dating back to

1880, and for many years used as a make-shift garage, was torn down and a modern brick garage erected on the same site. At the same time an old coke bunker directly in front of the old holder was torn down since it was no longer needed at that place. Thus an opportunity was offered for us to beautify the garage and surrounding distribution department property by planting borders of nasturtiums, dahlias, salvia, golden glow, canna, cosmos, gladioli, etc. The appearance may be judged by the pictures shown herewith.

What, you may ask, does all of this beautifying work accomplish since, of course, we all agree that the money taken in by a public utility must not be spent except for purposes which are proper and profitable in the long run?

First: It improves the morale and *esprit de corps* of every employee of the gas company organization and serves as one more reason for them to feel that their company is the best in the world.

Second: Improvement of property by thus beautifying it appeals to the public at large. They naturally take pride in pointing out the beautiful things about the city and we have yet to see a citizen



The other half of the "before and after" picture—the Charles Street Plant in 1925, work of grading nearly completed

who prefers ugly surroundings to beautiful ones.

Third: We believe that such beautiful surroundings as we are trying to furnish react upon employee and public alike so that better work is done, better public relations exist, fewer accidents happen, fire hazards are reduced, etc. In the last analysis, aside from the satisfaction which we all get out of it, we believe that it pays.

The following editorial from the *Fall River Globe* is of interest in the light of Mr. Curtis' statements:

"The Invisible Balance Sheet"

Judge Warren R. Voorhees, in a little sermon on the human values in the financial statement, as contrasted with the cold figures shown on the balance sheet, paints an interesting picture.

"I like to study the items of a balance sheet of a public utility with which I am acquainted; for example: 'Station grounds and buildings, \$290,000.' This is an attempt by arithmetic to describe these buildings.

"But I see a broad brown river, a level place set about with trees, a high green hill rising behind it. The buildings are of gray slate, warm red bricks and white stone. The waters in the reservoir are shining in the sun. The driveways are marked with whitewashed stones, which is old-fashioned, but green grass and whitewash are the cleanest combination in the world. The entrance gates are open and people sit about under the trees, and children run about in the grass with never a \$5.00-fine sign to stumble over."

Judge Voorhees then contrasts such a property with one, which by its unsightly appearance and the unfriendly atmosphere which pervades the whole organization of the company, actually repels people. Continuing he says:

"I would not expect a utility to build up the asset side of its 'invisible balance sheet' by large money expenditures, for we were long ago told that the things of the spirit cannot be bought with money, but good judgment, common sense, tact and unfailing and sincere courtesy, thoughtful consideration for the people we serve and for the men and women who help us serve, these are the expenditures, this is the legal tender which effects changes in the 'invisible balance sheet.'

"A public utility with its treasury empty of such currency may with confidence expect to find its regular balance sheet and income account adversely affected, so closely do things invisible impinge upon things material."



The 1926 Mode in Excavation Work

THIS is the new order of things in excavation work. The accompanying photograph illustrates the method of street construction work now adopted by the Southern California Gas Company.

By means of the use of movable bulkheads room is left for the passage of two streams of traffic, one on each side of the excavation. Dirt is shovelled into the boxes which are then trucked away.

This system was adopted by Harvey Holbrook, in charge of the work. The Los Angeles public and local newspapers have expressed their appreciation of the convenience and efficacy of this method.

Public Service Installs Purifying Equipment

THE Public Service Electric and Gas Company is having installed in its new Harrison gas works a new type of purifying equipment. Two distinct refining processes will be used, one for removing tar, the other for taking out sulphur.

Removal of the tar is accomplished by pumping the gas through an electrically charged chamber where the small tar and water particles are thrown against vertical walls. Thence they flow by gravity to the bottom of the chamber and out to the tar separators where the tar is recovered.

Elimination of sulphur is brought about by passing the gas through a solution of carbonate of soda in a cylindrical tank. Sulphur in form of hydrogen sulphide is absorbed by the solution which flows from the base of the tank to a plant which recovers the sulphur in cake form.

The gas then goes through a third cleansing process. It is pumped into iron oxide purifying boxes to ensure the complete removal of hydrogen sulphide. From these boxes the gas goes to the storage holders to be distributed as needed.

Building a Convention Program

Some Suggestions That Will Prove of Value to Those Faced
With the Problem of Arranging an Interesting Meeting

By KURWIN R. BOYES

Secretary, Relations with Affiliated Associations

ALMOST every active association worker is appointed at some time or other to serve on a committee which has the thankless but interesting job of laying out a convention program. By recognizing certain principles and tackling the assignment in a systematic manner along definite lines, instead of in a hit-or-miss fashion, such a committee can make its work easier, prepare a better program and ensure a more successful convention. This is an attempt to outline these principles and offer suggestions which it is hoped will be of value, especially to those having had no experience in program planning.

The success of a convention, however, does not depend altogether upon a good program. The manner in which the program is handled is also a vital factor; the presiding officer can make or break a program. Because of its importance and close relation, the conduct of a convention cannot be left out of the picture in any reference to the actual planning of a program and, therefore, will be given some attention in this article.

A convention program in its presentation directly reflects the amount of pre-convention thought given to it. A program hastily and carelessly slapped together at the last moment results in one of those listless, uninteresting and seemingly purposeless conventions where the audience itself gets careless and either drifts out or pays little attention to the proceedings. A convention thoughtfully planned and efficiently conducted results in an attentive audience and, what is more important, gives the members something to take away.

The kind of a meeting to be held is governed largely by the size and makeup of the audience.

The size of an audience strongly in-

fluences the latter's receptiveness: That is, a small one tends to be less formal and responds more readily to highly specialized treatment of a subject than does a large audience. The size of the audience, too, has a strong influence on the prominence of the speakers obtainable. However, the best possible should be secured. A convention is a post graduate school with the speakers the teachers and the delegates the students. Good teachers are the finest assets of any school.

By all means plan a balanced program. To satisfy an audience which includes, for instance, accountants, engineers, and advertising men, the program should be of such a general character as to be of interest and value to all, or it should consist of a few general items and also subjects intended primarily for each of the professions represented. The number of specialized subjects should be in proportion to the number of each profession likely to be present.

No one session should be planned to take more than two hours. This is important. The writer, after careful observation at the conventions of many associations, is convinced that even the best program cannot hold the interest of an audience longer than two hours. This length of time is about the limit for genuine attention, the kind that means absorption of what is being said. True, a part of the audience may remain longer but what is being said is falling chiefly on deaf ears as the minds between and a little above those ears have wandered away from the convention hall. The fact that each session should last no longer than this time makes those one hundred and twenty minutes precious, and every one of them should be utilized to the utmost advantage.

Just as the length of a session should

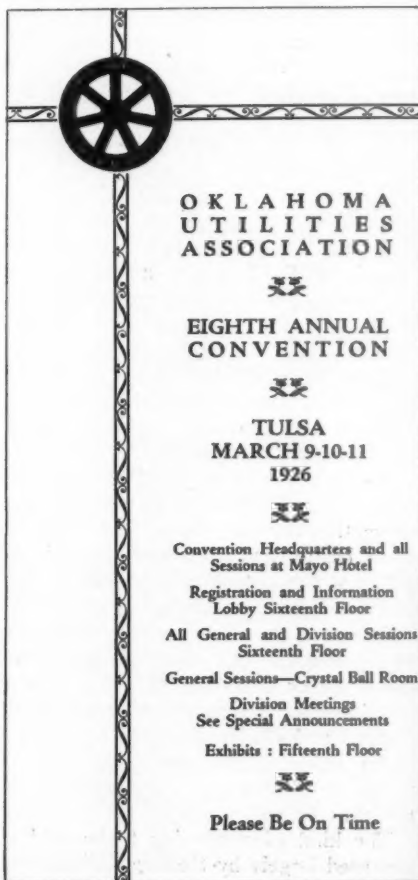
be limited, so should the number of items be limited. In a meeting with an overloaded program it is painful to watch the presiding officer nervously struggling to give everybody scheduled a square deal. This is so frequent an occurrence that it can be said safely that an overloaded program is the cause of more unsatisfactory meetings than any other reason. One precaution against this is to make due allowance in the preliminary layout for those requests for places which are inevitably received at the last moment and which are advisable to grant. The most satisfactory program has three main items for each session: That is, three in addition to formal, uninteresting routine matters such as addresses of welcome and detailed treasurers' reports which seem to clutter almost every program.

Everyone who has attended a convention can recall readily how his attention has wandered during the reading of a detailed treasurer's report, a detailed resumé of the secretary's activities for the year, and other perfunctory but apparently necessary matters which can be easily cut to a minimum by many and diverse methods. The valuable time thus gained can be devoted to matters of greater importance. For instance, the treasurer's report might well be printed prior to the convention and only a summary read from the platform. It is the writer's personal opinion that an address of welcome and the response to it are, in most cases, sheer time wasters. Much thought can profitably be given to the elimination or reduction of routine items.

A program committee should consider the adoption of a major subject or keynote for its convention. Such a keynote may be the "conservation of raw materials," "increased sales," or any other immediate problem or development in connection with the profession or industry. With the adoption of a keynote, each item on the program should be given over to a treatment of a phase of the main theme. A program consistently planned in this way will undoubtedly de-

velop ideas worthy of application and of material value in solving specific problems. It also aids publicity.

Encourage discussion by the audience whenever discussion is practicable. When a man goes to a meeting with a prepared paper, he goes with an umbrella up—he has carefully thought out all statements made in his paper and most of the statements thereby have lost their richest nourishment. However, in a discussion, the umbrella must necessarily come down; there is no opportunity to weigh every word and statement, and just about that time the convention gets its most valuable



**OKLAHOMA
UTILITIES
ASSOCIATION**

**EIGHTH ANNUAL
CONVENTION**

**TULSA
MARCH 9-10-11
1926**

Convention Headquarters and all
Sessions at Mayo Hotel

Registration and Information
Lobby Sixteenth Floor

All General and Division Sessions
Sixteenth Floor

General Sessions—Crystal Ball Room

Division Meetings
See Special Announcements

Exhibits : Fifteenth Floor

Please Be On Time

Cover design of a well-printed program

information from both the platform and floor. It is oftentimes difficult to start a discussion so that it may be advisable to have some prepared discussion ready to break the ice and encourage the shy to their feet. Nothing will stimulate impromptu discussion from the floor more than an atmosphere of informality and the presiding officer can do much toward creating such an atmosphere. A number of associations dispense with verbatim reports of their conventions as they feel the presence of a stenographer hinders free discussions. By all means, encourage discussion when possible to keep it within a scheduled time limit.

The position each item is placed on a program has its effect in maintaining the interest and attention of the audience. For instance, it is often advisable to have a heavy and involved discourse followed by one of a lighter nature. Topliners should be placed at the beginning and end of each session. It is well to place allied subjects as near each other as is possible. For example, a complete session might be devoted to sales. This latter arrangement permits the profitable attendance at a single session of those members who cannot attend an entire convention.

The first session of a convention is usually the best, the attendance is at its maximum and the attention keenest. This should be kept in mind when arranging a program.

Perhaps no industry or profession is endowed with a plentiful supply of capable speakers, and speakers with little platform ability get tiresome regardless of their prominence or the importance of their subjects. It may be advisable, therefore, to schedule one address during a convention to be delivered by a person who has platform ability. His subject may not be strictly appropriate and its purpose might well be to amuse, or to inspire generally, or even to instill oratorical ambitions. It is generally conceded that the ability to express one's self interestingly and convincingly from a plat-

10:00 A. M. Meeting called to order and opening remarks by the President. H. S. WATSON Election of New Members	1:00 P. M. "Changing the Gas Buying Habits of America" DR. S. S. BROWNE Executive Secretary Domestic Fuel Development New York, N. Y.
10:30 A. M. "The History and Development of the Gas Meter" H. C. GIBBS, CHAIRMAN Pres. J. C. G. Company Philadelphia, Pa.	2:00 P. M. "Selling Gas for Industrial Purposes" A. P. LAMBERT General Industrial Fuel Representative Public Service Electric & Gas Co. Harrisburg, Pa.
11:00 A. M. "Birmingham Coal for Generator Fuel" H. M. PERIN General Superintendent of Steamships Public Service Electric & Gas Co. Harrisburg, Pa.	Open discussion
Discussion led by C. W. DAVIS Trenton, N. J.	2:30 P. M. "Marching Your Program" EDWARD MURPHY Public Advertising Agency Philadelphia, Pa.
11:30 A. M. Adjournment.	

A program that preserves all the niceties of correct balance—something for everyone

form while facing an audience can be acquired.

It is difficult for many people to sit quietly through the reading of a long technical committee report without getting uneasy and losing interest. Everything should be done to maintain interest and at the same time do full justice to the report. If the report has been printed and copies distributed at or before the meeting, it is recommended that a resumé of the report be presented or an abstract read. The complete report can be read at leisure by those interested when its contents will have a more favorable chance of proper digestion.

A printed program serves two purposes: It advertises the meeting to attract attendance and it is a guide to the order of business. The first is the more important. Everybody today agrees that attractiveness in an advertisement is essential, both as to choice of words and physical appearance. It is surprising, therefore, that so many programs are printed with apparently no consideration of either, especially since it requires so little additional work. Each item scheduled should be given an appealing title, a title which will create a desire to hear that particular item and a feeling of distinct loss if it is not heard. For instance, an address on public relations would be far more appealing and promising if it were listed as "How One Company Improved

Its Public Relations," rather than just "Public Relations." It would be well to carry this idea to committee reports and label them with titles which would convey a hint as to what they contain, as "Methods of Reducing Accidents—Report of Accident Prevention Committee," instead of the bromidic title of "Report of Accident Prevention Committee." For the same reason that an architect finds it well worth while to spend considerable time in the lettering of a drawing, frequently more time than on the actual drawing, so will a program committee find it time well spent to have a program attractively arranged and printed. Attractive printing is not synonymous with costly printing.

The order of business as given in the printed program, out of courtesy to speakers and the attending members, should not be changed unless absolutely necessary. Adhere to the announced procedure if at all possible. The speakers and listeners have arranged their personal plans agreeable to that order, and a change for the convenience of one will undoubtedly inconvenience many. A presiding officer may not think of this when he makes a last minute shift in the order of business.

Experience indicates that the morning sessions should open at ten o'clock. Attempts to begin earlier have resulted in either lame or delayed starts. Every possible effort should be made to open the meetings promptly as scheduled, by means of warnings in the printed program and poster notices, announcements from the platform, and by paging the meeting place.

In most cases it will be found advantageous to lay out a program to a time schedule and every means taken to maintain it. It is recommended that a detailed working program or time log be prepared which will include all minor items not given in the printed program, such as, for example, the reading of greetings from prominent individuals not present or greetings from other associations. The

presiding officer will find such a time log invaluable as a guide in running the meetings, making it unnecessary to lean heavily on the secretary.

The invitations to speakers should by all means include the time allotted to each and a courteous request to keep within that time. Each committee chairman should also be informed as to the length of time allotted for the presentation of his committee's report. These may seem to be trifling details, but, in planning a successful convention, no details are unimportant—overlook none.

When an association has invited a man to address its convention, the association obligates itself to show him every possible courtesy. He should be given the place on the program that his standing and subject warrant and allowed the full time stated in the invitation extended to him; everything should be done to ensure a well-attended session. He ought to be adequately and properly introduced. Finally, the appreciation of the association should be given to him graciously and publicly at the conclusion of his address. This appreciation should later be repeated in writing. All this is little enough to return for the time and effort required for the preparation and delivery of an address. However, it is regrettable that associations, maybe in the stress of convention procedure, frequently overlook these courtesies.

Perhaps the presidents of associations will welcome a couple of suggestions for annual address material. First, the keynote of the convention and the reason of its choice could be covered and the program for the convention described. Then, the progress and important developments in the profession or industry during the year could be taken up and no better source for this information is available than the year's file of the appropriate trade papers.

The entertainment features of a convention are most important but are generally well-planned and capably carried

(Continued on page 602)

Can Collections Be Made Painless?

The Answer Is That Gas Companies Can Go Much Farther Than the Dentists Have Gone

By W. C. ARCHBOLD

Manager, Credit and Collection Dept., The Syracuse Lighting Company, Inc.

POSSIBLY the sub-rosa complexion of the collection industry has kept it in the background. It gets little publicity. Few people realize the magnitude of it. Many think a collector naturally leads a miserable existence—that no scientific ability is required of him, and that no particular attention should be paid to him and his development.

This impression is false. A crack collector leads a fascinating existence. He is constantly trying to increase his collections and build up good will for his company. A wide-awake company appreciates a development of a good collection force resulting in low losses and good will.

In our business, gas holders can be built, transmission lines run, service improved, but the sting a customer feels when a collector tries to collect a bill from him in the wrong way, is not healed.

"Polite persistence" is a term frequently used in sales building. It can be used in collections.

The discontinuance of a service for non-payment is dangerous, if improperly handled. If the money can be obtained within a reasonable length of time, it is better to wait. It is less expensive in operating costs. It means more revenue. Naturally, the customer is more friendly.

Constant supervision and coaching of collectors is needed. A head collector at least once a month should make the rounds with each collector and personally instruct him—especially in human nature.

I once heard a collector whistling "Hail, Hail, the Gang's All Here" as he was going down a cellar to shut off a gas meter for non-payment. This young man

is employed in a boiler factory at the present time.

People like to have you say pleasantly, "Pardon me, but I have a gas bill here you have apparently overlooked," rather than with a scowl, say "Pay up or I'll shut you off."

By going along a few days with the needy and afflicted, you can make them your friends for life. You can make them the biggest boosters you have.

But remember this "Polite Persistence." Be sure and be on hand when they say they'll have the money—they'll respect you for it.

Our company has not operated entirely on strict collection ethics. This holds true especially in our out-of-town final bill correspondence. In one of our rather unusual dunning letters, we say, "While you were in Syracuse, we tried our best to please you with our service and we hope that if you return, we may have the pleasure of serving you again." Complimentary replies to this letter repose in our scrapbook which is a veritable museum of specimens of replies from customers.

It sounds foolish to dun in poetry. We have—and nearly a score of customers have retorted in kind, enclosing checks. Here's one:

*"'Twould seem when spring is in the air,
You'd write a verse to your lady fair
To call her dewdrop, pearl and honey
But your thoughts seem to turn to
money,
So I've made out this little check
Which you will find enclosed, by heck."*

Our theory is that we are bound to lose out on some customers anyway—so why not keep the majority reasonably happy?

M. B. Daly Stricken While Working



Martin B. Daly

MARTIN BENSON DALY, president of the East Ohio Gas Company, Cleveland, Ohio, dropped dead in his office Wednesday, Sept. 8.

Mr. Daly was a well-known member of the gas industry. He was very active in the American Gas Association, having served on the Board of Directors. He was the first member of the Board to die while in office.

Born near Mayville, N. Y., May 11, 1860, his 66 years of life were crowded with the most virile activity. Martin B. Daly stood for the highest type of industrial leadership. The end of his life was typical of its course. He died at his desk while talking with one of the company's customers.

He spent the first 18 years of his life on a farm, then began work at Dallas City, near Bradford, Pa., where he started as a pipe fitter.

In 1881, Mr. Daly was made assistant superintendent of the Warren County Gas, Fuel and Heating Co., which company piped gas to North Clarendon, Pa. Then came a period of construction of natural gas distributing facilities at Oil City, Titusville and Meadville. The Buffalo Natural Gas Fuel Co., which under-

took to install the then world's record length pipe line—90 miles long—from the Bradford district to Buffalo, sought Mr. Daly to be superintendent. This was in 1886. It was pioneering work, for the practicability of transporting gas this distance was doubted by many of the early-day gas men.

Four years later the help of Mr. Daly was needed by the Northwestern Ohio Natural Gas Co., which faced stiff competition from the city of Toledo, which had issued bonds and thus itself financed a natural gas distributing company. Mr. Daly was placed in charge of the work of expanding facilities to meet the competition, later being made general superintendent of the company.

Cleveland offered a larger field for his talents in 1902, when the East Ohio Gas Co., then six years old, sought a long-term franchise to distribute natural gas. Mr. Daly was instrumental in getting the company firmly established. Immediately thereafter he was made general manager and in 1906 was elected president also. Three years later he effected a merger with the Cleveland Gas, Light and Coke Co., which operated an artificial gas plant.

Mr. Daly was a former president of the Natural Gas Association of America.

Funeral services were held Sept. 15. Active pallbearers were Ralph W. Gallagher, vice-president and general manager of the East Ohio Gas Co.; John J. Stanley, president of the Cleveland Railway Co.; M. P. Mooney, attorney; H. V. Shulters, president of the National City bank; D. J. Champion, president of the Champion Rivet Co.; Frank H. Randel, vice-president and district manager of the Autocar Sales & Service Co.; Michael F. Barrett, president-treasurer of the Cleveland Brass Manufacturing Co., and John J. Bernet, president of the Nickel Plate railroad.

Honorary bearers were Dr. T. J. Schmoldt; George A. Coulton; Christy Payne, executive of the Standard Oil Co. of New Jersey in general charge of natural gas companies; C. T. White; John B. Corrin, general manager of the Hope Natural Gas Co.; Frank H. Ginn; Herman Trenkamp; Malcolm G. Vilas, of the Standard Oil Co. of Ohio; Henry A. Taylor, Fred A. Miller, of the Dresser Manufacturing Co., Bradford; Appellate Judge John J. Sullivan; Gordon Mather; George W. Crawford, of the Columbia Gas & Electric Co.; Edward Butler; Walter C. Teagle, president of the Standard Oil Co. of New Jersey; J. C. Donnell, president of the Ohio Oil Co.; Supreme Court Judge Reynolds R. Kinkade, of Toledo and Judge Brian O'Donnell.

In Memoriam

Robert McSaveney, Jr., Brooklyn Union Gas Co., Brooklyn, N. Y.

H. M. Holmes, United Gas Improvement Company, Philadelphia, Pa.

Some Experiences in Team Work

It Pays to Consider the Utility Employee in Any
and Every Public Relations Program

By **GEORGE S. HAWLEY**

Vice-President, The Bridgeport Gas Light Company, Bridgeport, Conn.

PUBLIC utilities woke up a few years ago and found that they had bad reputations. They were looked upon with suspicion. Unlike the dog judged by the bad company he kept, the utilities were looked upon as the bad company. The sins of their business forefathers rested heavily upon them. Even today if a politician desires to make a big hit among the unthinking, he starts something against public utilities.

Realizing the situation which faced them, well-informed executives, after studying the subject, discovered that absolute frankness in dealing with the public, friendly co-operation with their employees, adequate service, and ample publicity seemed to be the best way to overcome their difficulties.

The question is how do they manage their relations with their employees and the public? What is their experience in team work? I think that it is interesting to note that very little is done in a haphazard way, as in the past. In the old days a manager might have what seemed to be a good idea, and he would apply it to his employees, but usually he was pained and shocked when his good services were rejected because of the employees' hatred of paternalism. He worked largely in the dark. Today utilities do not work in the dark. Employee relations are carefully considered from every standpoint. Trade associations and



George S. Hawley

specialists study the suggestions, and then if satisfactory they are put into operation.

Team work means co-operation, and co-operation means the conscious and willing effort of all parties concerned to work together unselfishly for the common cause which they represent or by which they are affected. In this respect public utilities have a more difficult problem than the average industry, because it is a three-cornered affair—the employees, the management, and the public.

The factory manager can fail to treat his employees as he should, provided it does not become a scandal or cause a strike, and it has no effect upon his product, which may be marketed in distant cities or countries. But if a public utility mistreats its employees, it vitally affects its commodity, because the employees themselves are the ones who constantly meet the public, and who are, in the eyes of the public, the company itself. Hence, public relations and employee relations are bound up together as one subject, and should be treated as such.

I said that team work means working together for the good of the cause, not acquiescence in a course unless it be for the benefit of all. A lady entered the office of a Public Service corporation and, showing a bill, said to the complaint clerk, "I think this bill is outrageous. I don't understand how you dare render

such a bill." And the clerk replied, "I think so too. It is outrageous; and if the man who makes the rules heard what I hear he would know more than he does now. But nothing can be done about it. It is the rule, and that is the end of it." In another company a similar situation arose. The clerk said, "I am very glad that you came in, because I would like to explain the bill. We want our friends to be fully satisfied with our service and thoroughly understand our reasons for all that we do." Then after a careful explanation she said, "If you wish I will gladly introduce you to our general manager, and he will go into the matter more fully." In the first instance there was disloyalty and lack of team work on the part of the employee; dissatisfaction and illwill on the part of the customer. In the second instance there was loyalty and team work, a satisfied customer and resultant good will.

Team work was little known in public service corporations in the past, and there was small consideration of the public by employees, and indeed, by the management. I am happy to say, however, that today in all well-managed companies (and in my opinion that means most of them) consideration of the public is perhaps the most important factor in the mind of the successful manager. But that is another story.

Now how have the public service companies met this particular problem? First, by example on the part of the executives. Then, great care is exercised in informing the employees on all matters of policy, so that they will understand. Classes are conducted not only on the different phases of the business itself, but as to how employees should conduct themselves with the public, actually acting scenes with imaginary complainants and clerks; for it is thoroughly understood that the company needs and must have the good will of the public, and about the only way it can have it is by having the good will of the employees.

These courses include studies of sub-

jects related to the gas business—pension systems, accident funds, rates and rate making, gas manufacture, gas distribution, meters. Then there are courtesy conferences with written essays on the subject, conferences on patience, self-control, persistence, truthfulness, and loyalty. These conferences include the discussion of such matters as the proper approach of the order clerk to the consumer; how far, if at all, an employee may resent personal and company insults; the treatment of a customer who complains about the size of the bill, or who doubts the accuracy of the meter, and so on.

Then we come to the question of service, that much overworked word, but still full of meaning and influence. A very large part of the work of a public service company is service. It is not enough, as was thought in the past, for a company to make and deliver a good commodity. The service must be such that the use of it is satisfactory, even though the company did not sell the appliances in which the commodity is used. Indeed, no matter what the situation may be, if a consumer thinks help is needed the company must do its best to assist.

A woman cooks her meals for a year on a gas range. She never cleans the burners. Grease boils over and fills the orifices. Because of these conditions the flame becomes yellow and uneven and pops back. She complains to an employee and says that the gas pressure is poor, and that "the gas isn't any good anyway." Another employee is sent to the scene. He finds the conditions that I outlined. He removes the burners, reams out the holes, perhaps cleans the burners in boiling water and washing soda, and explains to her that this should be done every month or so. He puts the burners back, lights the range, and leaves it with a beautiful blue flame ready to cook efficiently.

A man comes to pay his bill. He mildly or wildly comments on the size of it. Suppose the cashier says to him (as the

history of past years discloses has happened): "That is the bill, pay it, or leave it and have your service discontinued." It doesn't take a keen imagination to fancy what the result of a few such contacts would be. Indeed, in the middle west some years ago it is said that when a man complained about his bill, the cashier got angry and told him where he could go. Instead of going there, he went to the legislature and had a bill passed changing the basis of rates. It cost the company a great deal of money, all kinds of inconvenience and much illwill. But, on the other hand, kindness and courtesy and good service favorably impress the rich and poor, the humble and arrogant.

There is an interesting story that comes from the West. A Chinaman peddling fruits and vegetables paid his bill at the window of a public service company, went out to his wagon, and soon returned with a basket filled with delicious fruit and gave it to the cashier who received his money. The manager happened to be standing near and told the Chinaman that he had done a very nice thing. He replied: "She smiled and thanked me when I paid my bill."

There are 101 different kinds of complaints which may be made, and when you consider that even a medium sized company has about 50,000 consumers, you will see that there may be many contacts in the course of a month, and all of these contacts are with the employees. These complaints must be considered on the theory that the complainant is always right, unless and until the facts convince to the contrary; for, as in most disputes, the important thing is, not what the facts are, but what the employee or the customer *thinks* the facts are. In all cases the complainant must be treated quietly, with patience, courtesy and fairness.

Years ago public service companies went their way regardless of complaints, whether well-founded or not; even in later years, if no complaints were received they felt justified in assuming that everything was satisfactory. Now up-

to-date companies go looking for trouble. Some go so far as to send specially trained men to canvass all the consumers to find out whether the service is satisfactory, and, if not, wherein it fails. Efforts are at once made to remedy any defects.

The Peoples' Gas Light and Coke Company of Chicago analyzed and rated all the factors which determine the customers' estimate of its service and it was found that the impression left by personal contacts with employees was twice as strong as all other factors combined. "In other words, the impression left by contacts with meter readers, collectors, fitters, telephone clerks, counter clerks, and others, was twice as important as the promptness, dependability, efficiency, and all-round physical quality of the service itself."

As to the employee activities and relations, in which the public is not interested or affected except indirectly, they are practically the same as in any modern industry. *World's Work* for June, in an article on "Annual Reports," stated that the "most noticeable thing in the latest annual reports of leading corporations is the attention being paid to public relations and to relations with employees. Group insurance, pension systems, or profit sharing arrangements are becoming the rule rather than the exception. And the benefits which flow from wide public ownership of securities are now appreciated by many more than just public utilities companies."

Employee ownership of securities is a very common thing in public service corporations. It makes the employee feel that he is a part of the company, that its interests are his interests, and that each is interested in the other's welfare. Owning stock makes the employee more careful, more economical.

In the smaller companies I believe that personal contact of officers with employees is far better than any committee plan when it comes to personal relations, such as wages and salaries, certain con-

ditions of employment, and kindred subjects; but in the larger companies where that is not possible they commonly employ some form of employee representation plan. In one large company there are more than 300 representatives of the several thousand employees. The 300 are organized into more than 20 councils, meeting on company time. These representatives are elected by secret ballot. This plan makes it easy and satisfactory to discuss all conditions relating to employment, clearing up apprehensions and remedying difficulties. In addition to that it helps to educate in American ways of government.

Then there are company clubs, which provide means of education, entertainment, clean sports, singing societies, private theatricals, picnics, luncheons, dinners, dances, baseball.

Libraries have been established holding from a few volumes up to 4000, together with periodicals, both popular and technical. There are also lecture courses, public speaking, letter writing, classes for girls in home hygiene, sewing, dress-making, millinery, first aid, practical cooking, etc.

Training the foreign born is another feature. In this same company in one year there were 456 working for the company who had not taken the first steps toward naturalization. The next year there was not one.

As in other industries, prizes are given for accepted suggestions. There are annuities, insurance, thrift, sick-benefit associations, loans without interest, and so on through the list of helpful things.

The Chicago company in 1925 presented its employees at Christmas, based of course upon certain factors, over \$4,000,000 in life insurance, and these employees took out over \$3,000,000 more, made possible by the terms of the policies.

Many companies make it possible for ambitious employees to take courses in various colleges, both in the technical line and in business economics. In one

large company there were enrolled last year more than 1100 employees in these courses. Then there are the apprentice schools for "training in" employees. The company magazines are of great value and influence too.

Much time is spent in personal advice and assistance of employees on many matters, such as illness and death in the family, business and money affairs, legal matters, and domestic difficulties.

It is not unusual to have co-operative buying associations, where clothing and household necessities are bought in large quantities, thus lessening the cost of living to some extent.

The experience of the Philadelphia Rapid Transit Company shows many illustrations of the result of team work. The system was broken down, cars and equipment were obsolete, employees sullen and discontented. The company's credit was so exhausted that it was impossible to meet a raise of half a cent per hour which had been agreed upon to settle a strike. New management was introduced. Fair and co-operative plans were agreed upon. Things began to move. The employees in their wonderful team work actually sold to the car riders of Philadelphia ten million dollars of the company's seven per cent preferred stock in just ten days, and the average per person was about five shares. Not one cent was paid in broker's commissions, or any other commissions, nor were any prizes given to the men.

Again, during five week days the heavy cars of the company to and from a certain section were crowded, but Saturdays and Sundays they were practically empty. They were losing money. A young conductor said, "Why not put all of these heavy cars away on Saturday and Sunday and substitute light cars from one of the other sections?" With this suggestion he turned in figures showing an estimated saving of \$42,000 a year. The management tried it, and showed that the figures were exactly

(Continued on page 614)



New truck used by the Consumers Gas Company to collect drips

Pumping Drips, 1926 Fashion

**In Reading It Is Merely a Matter of Proper
Routing of the Work to be Done**

By WILLIAM NAILE

Superintendent of Distribution, Consumers Gas Company, Reading, Pa.

WHILE reading F. A. Baker's excellent descriptive article "The Modern Method of Collecting Drips" in the June issue of the A. G. A. MONTHLY, the thought came to mind to describe what we consider the latest development in the field for pumping drips, which we have been using in Reading, Pa., for the past two years.

Our outfit consists of a 500-gallon welded steel tank, mounted on a two-ton G. M. C. chassis with steel wheels and solid tires. There is a two-man enclosed cab for the protection of the driver and helper, when it is necessary to use a helper in snowy weather. The tank is mounted on a specially designed substructure and is provided with suitable splash plates, three in number, to prevent the surging of the liquid during transportation. To measure the amount of liquid pumped from each drip there is a float device which indicates directly in gallons on a scale. A vacuum gauge is

mounted on the right side of the truck, which enables the operator to determine when all of the liquid has been drawn from the drip. Air release and liquid check valves are provided to get rid of the air in the tank, while it is being filled, and to prevent spilling of the liquid during transit.

A 5" x 5" piston pump, with a rated capacity of about thirty-three gallons of liquid per minute, is mounted between the tank and cab. The pump receives power from the truck motor through a separate shaft on the transmission. The power take-off control and auxiliary gas throttle are mounted directly below the pump on the right side of the unit. The pump is protected from the elements by a substantial curtain cover, which can readily be thrown back, when it is necessary to get to the pump. Necessary valves on the inlet and outlet of the pump are within easy reach on the right side of the tank. The unit has two flexible hose drip

connections, one of which is run to the front and the other to the rear. This arrangement permits pumping drips from almost any position to the front or rear of the truck or to either side. A flexible hose is also used to connect the pump to the tank, so that leaks at joints of pipes and fittings are eliminated. To prevent freezing of the liquid in the pump and connections, a heating unit is placed so as to keep the pump warm during cold weather. A heater pipe is also carried to the rear outlet of the tank. The heater units are connected to the exhaust pipe from the engine of the truck. A tool box, the full length of the tank, is provided on each side of the truck to carry any tools that may be needed while pumping the drips.

This outfit is the result of many months of careful planning by the Engineer of Gas Distribution of the U. G. I. Contracting Co., who realized the need of such equipment after many years of practical experience. He was ably assisted by a number of gas distribution engineers and engineers from the General Motors Truck Company. It has created a favorable impression on our consumers and with it, drip pumping has become merely a matter of proper routing of the work to be done.

Building a Convention Program

(Continued from page 594)

out. Nothing will be said about them here except that it is advisable that they should be handled by a committee separate from the program committee. However, the two committees should co-ordinate.

The ambition of a program committee should be to give the members something in return for attendance and attention, presenting the information in the most palatable manner possible. Strive for a program of action. To accomplish such results all the suggestions given in this article will be helpful, but the more important of these are: Plan a balanced program of not more than three major items per session and each session lasting no

longer than two hours; avoid an overloaded program; encourage discussion when practicable; produce an appealing and attractively printed program, and give careful consideration of the position of each item on the program.

Nothing will teach program building better than making an impartial analysis of the success of a convention, item by item, immediately after adjournment. Forget the bouquets that are promiscuously handed out in regard to it and honestly criticize the program as presented. Do not stop at that point, but decide what would have improved the sessions. It is about this time that one is convinced that a successful meeting cannot have too much pre-convention consideration.

The ideas given here are in most cases not original with the writer; they are opinions generally held by men experienced in program building. Perhaps the reader may find the collected advice useful when faced with the problem of producing a program; if so, the article has served its purpose.

Forty-one Gas Water Heaters

(Continued from page 585)

- 2 Ruud Automatic Storage Systems
- 1 Lovekin Automatic Storage System
- 1 Ruud Multi-coil Automatic Storage System
- 2 Pittsburgh Automatic Storage Systems
- 2 Pittsburg Automatic Storage Systems
- 1 Pittsburg Automatic Storage System
- 1 Ruud Automatic Water Heater
- 4 Lovekin Automatic Storage Systems
- 4 Ruud Automatic Water Heaters
- 1 Pittsburg Automatic Water Heater
- 4 Ruud Automatic Water Heaters
- 1 Bryant Automatic Storage System
- 1 Kompak Automatic Storage System
- 1 Kompak Automatic Storage System
- 1 Ruud Automatic Water Heater
- 2 Merion Automatic Storage Systems
- 1 Pittsburg Automatic Water Heater
- 1 Merion Automatic Storage System
- 1 Ruud Multi-coil Automatic Storage System
- 1 Ruud Automatic Water Heater
- 1 Ruud Automatic Water Heater
- 1 Ruud Automatic Water Heater
- 2 Ruud Automatic Water Heaters
- 1 Ruud Automatic Water Heater

There you are—22 buildings served with automatic gas hot water and a total of 41 automatic gas water heaters. It's a record worth talking about.

Rochester Has a Home-Service Home

New Building Recently Erected Provides Unique and Interesting Quarters for Department

NO one was more enthusiastic than the 60,000 consumers of gas and electricity when the scaffolding in front of the new million-and-one-half dollar Rochester Gas & Electric building was folded away and the exterior of this ten-story office building became visible. Not only is this new building a credit to the organization which has visualized its growth, but it is a contribution to the progressive appearance of the city.

Perhaps one of the finest contributions to the women of Rochester is incorporated in the new Home-Service Home located in the basement of the building. Home service is not a new feature with this company, since it has previously existed in the form of home lighting. However, the Home-Service Home is the latest step in its present development.

Miss Helen A. Smith, illuminating engineer, is now director of the department. Under her direction an efficient staff of women are prepared to present methods of good housekeeping to the women of Rochester. Radio talks will

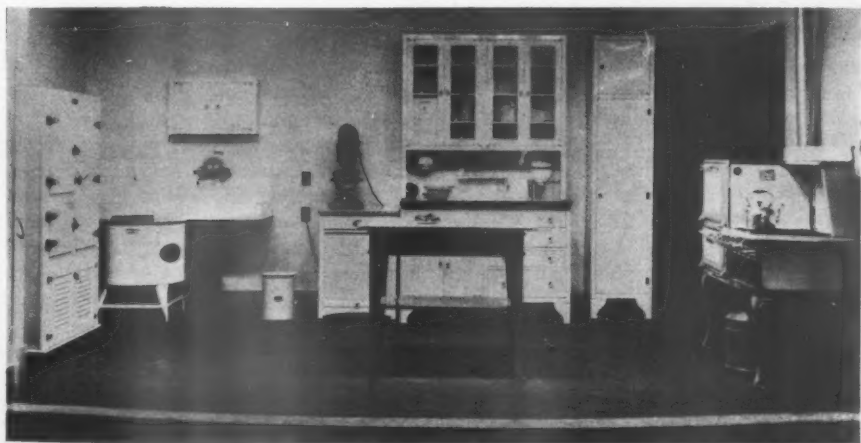
be given every morning at 11:00 o'clock over Station WHEC. A home-like background in a quiet hospitable atmosphere suitable for the demonstration of the latest gas and electrical appliances is given in the Home-Service Home.

It is gilt-edged recognition of the part that the housewife plays in creating that additional domestic load as well as her share in the steady consumption of gas in the home.

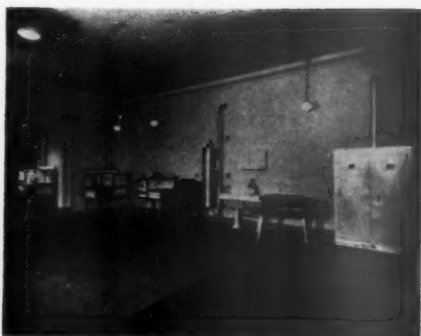
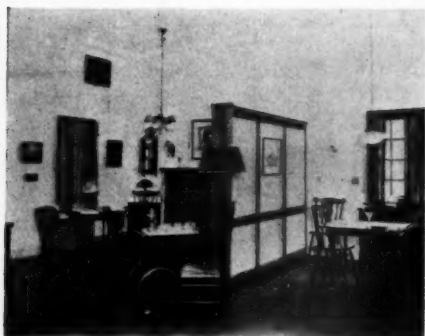
To project the gas and electric idea against a colorful home background is the promotion idea embodied in the success of this department. Just as the manufacturer today is influenced by the housewife's idea of his product when he comes to improve on its construction so has the gas company recognized the value of demonstrating household appliances in their proper atmosphere.

Even the entrance of the Home-Service Home has been transformed into an inviting little reception hall with its rather diminutive table desk.

One enters the inside door expectantly



Platform for demonstration purposes in the new Rochester building



Two views of the Home-Service Home

and finds all of the rooms in the average American home, all of them arranged on the same floor plan. The right wall represents the household engineering department of the Home-Service Home. Here the laundry appliances are assembled to constitute a completely equipped home laundry ready to handle a family washing in a few hours' time. The porcelain tubs stand directly on the right of the hot water unit. After the washing, all the pieces can be hustled into the gas-heated drier which fans and blows the moisture out on a regular sunny-day plan. The ironer uses the combination of gas and electricity.

As one proceeds to the front of the main room, which is really a small auditorium, one sees the slightly elevated stage which is permanently set up to represent a modern home kitchen. Every working unit in the kitchen is a model of glistening whiteness. The white enamel table at the very front of the stage is for cooking demonstrations. The illusion is perfect as the eye travels from the automatic refrigerator to the enamel sinks, Kitchen-Aid, kitchen cabinet, and to the cooking ranges.

Everything is as complete as any housewife could possibly wish for. On the right off-stage is the pantry with its board shelves and tall cupboards. The stage is the laboratory in which appliances are tested out for the company;

cooking demonstrations are conducted for the women, and talks on home lighting are given. It is here also that lectures and talks on subjects closely related to the home will be given by specialists in dentistry, medicine, and sanitation. The educational work is not limited to cooking and lighting problems, but branches out into their many interesting phases.

The left section of the auditorium is divided into model rooms which are arranged in the order of bedroom, dining room, living room and bath.

The character of the living room is exemplified by the radiant heater. That this strikes a distinctive note is proved by the fact that many of our visitors have made particular mention of it.

The auditorium of the new Home-Service Home will seat more than one hundred women and the stage is large enough for small informal groups. This last feature is important since it creates a congeniality which intensifies the interest of the women in the class. The Home-Service Home is not only a meeting place for members of the company, but for the women in all the departments and every customer to whom the company supplies its gas and electric services.

Home service in this company means a friendly spirit of co-operation which extends beyond the walls of this organization into every home. It stands for enduring service.

This Thing Called Public Relations

A Small Town Gas Man Has More than Small Town Opportunities When He Is In the Gas Business

By JACOB B. JONES

Treasurer, Bridgeton Gas Light Company, Bridgeton, N. J.

WHY do we attend conventions? That question, if asked of those who are in Atlantic City at the Eighth Annual Convention of the American Gas Association, would bring forth a variety of answers, since it would reflect an individual viewpoint.

Actually, we attend conventions for the purpose of selling more gas.

Approached from any angle, we must eventually reach that point. No matter how successfully we can manufacture our product, or how economically we can distribute it, the fact remains that gas in the holder is not worth a nickle a thousand if we cannot sell it.

The exhibitors who have at great expense brought to us the latest developments in their respective lines, all appreciate this.

The executives who direct this great industry of ours have the sales of gas ultimately in mind. And the millions of dollars invested in our securities are dependent upon just one thing and that is our gas sales.

This is no sense to be construed as a reflection upon that loyal body of men and women who compose the organization which produces and sees to the distribution of our gas.

It is meant, however, to emphasize the fact that gas in the holder has no value, if we cannot sell it. Why take all of this space to talk about a perfectly obvious fact?

Because it is obvious, there remains a possibility that we cannot see it.

The late Dr. Russell H. Conwell delivered his lecture "Acres of Diamonds" many hundreds of times, and presented the proceeds from it to Temple University in Philadelphia, which will ever stand as a monument to his memory.

Dr. Conwell told in simple, homely phrases that our acre of diamonds was in our own back yard and it is that thought which I trust I may convey to the gas industry.

This indefinable subject that we call public relations has come in for a lot of consideration in the last few years. Personally, I like the expression public sentiment better.

However, a rose would be just as sweet by another name, and we are all "heading in" for the same direction.

Our relations with the public, and just what they think of us, to my mind, rests on our own doorstep. And in this connection the small town gas man has the greatest opportunity. The very busy executive in the greater cities may and does serve on civic committees, and for their very valuable time receive two or three lines or at the most a paragraph, in the metropolitan papers.

On the other side of the picture the small town gas man gets a column in his local paper if he is willing to work.

Reduced to plain terms, almost anybody can put gas in the holder, but it takes some practical work to sell it.

When you serve your Rotary or Kiwanis Club as President, or act as Chairman of the Red Cross Roll Call, or a Major in the campaign to raise money for your hospital, you are not only helping your community, you are also selling gas.

Speaking before the Every Hour Club at the Fire House or talking to the boys at the Inter-City Baseball League may mean an entire evening but it helps.

This is not offered as a panacea for all ills; it is, however, a sincere suggestion from a small town gas man about this thing we call public relations.

(Continued on page 634)

A Valuable Portfolio for the Architect

Attractive Folder Containing Prize Small House Plans and
Gas Installation Data Being Prepared by Association

THE new portfolio to contain the fourteen prize and honorable mention plans of the recent architect's competition offers all gas companies and appliance manufacturers an unparalleled opportunity to develop close relations with architects locally and educate them to the importance of gas service in the home of today.

This portfolio, which is now in the course of preparation and will be on display at the Annual Convention in Atlantic City, is of the standard size as recommended for architectural data by the American Institute of Architects. In addition to double page cuts of the prize plans, it contains in concise form all the information an architect or home builder needs to have at his disposal in order to provide fully for the many services that gas now performs in the home.

The prize plans were selected as much for the convenience and livable quality of the houses shown as for the outside appearance. The tremendous interest shown by the local architects, who have visited Headquarters to inspect these plans, proves that the booklet will be welcomed by architects throughout the country for use locally.

A glance at the table of contents given below shows the wealth of these data, which, in addition to the house plans, are useful advice to architects, builders, and those contemplating the construction of a new home.

The table of contents is as follows:

1. Proper Piping for Domestic Service
 - a. Size of Piping
2. Flues for Safe Use of Gas
 - a. Flue sizes
 - b. Number of Flues Desirable
 - c. Construction of Flues

3. Types and Sizes of Ranges for Domestic Use
4. Water Heating by Gas
 - a. Types and Sizes
 - b. Piping and Flues
5. Auxiliary Room Heating
 - a. Types and Sizes of Heaters
 - b. Information on Installation
6. Heating the Whole House by Gas
 - a. Types of Furnaces and Ratings
 - b. Automatic Control
7. Garbage and Waste Disposal
 - a. Types of Incinerators
 - b. Location, Piping, and Flues
8. Refrigeration by Gas
 - a. Operating Principles
 - b. Progress to Date
9. Miscellaneous Uses of Gas in the Home
 - a. Garage Heating
 - b. Laundry Equipment
 - c. Log Ignitors
10. House Insulation for Heat Economy
11. The Sign of Quality Gas Appliances
 - a. The A. G. A. Laboratory and what it means to the architect and the home builder.

The portfolio comprises 34 pages in all and carries a cross tab in the back cover to permit gas companies and manufacturers to insert any data desired before distribution to architects and home builders. Be sure to see copies on display at the A. G. A. Exhibit at the Convention.

The first six prize winning plans in the competition are reproduced on the following pages. The MONTHLY is indebted to *Pencil Points* for the use of the illustrations.



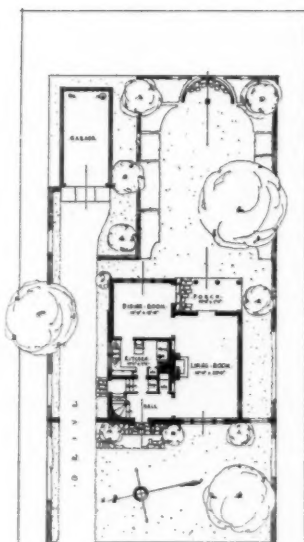
· PERSPECTIVE · VIEW

· BATHROOM PLAN



· GAS FIXTURES

- | | |
|--------------------|------------|
| 1. DOWNER | BATHROOM |
| 2. GAS RANGE | KITCHEN |
| 3. WATER HEATER | " |
| 4. LAUNDRY TUB | " |
| 5. CLOTHES DRYER | " |
| 6. TOILET | " |
| 7. WASHING MACHINE | " |
| 8. FIRE PLACE | " |
| 9. STOVE | KITCHEN |
| 10. FIRE PLACE | LIVING RM. |
| 11. FIRE PLACE | BED RM. |
| 12. HEATER | GARAGE |
| 13. WATER HEATER | GARAGE |



· FIRST FLOOR · & · PLOT PLAN ·



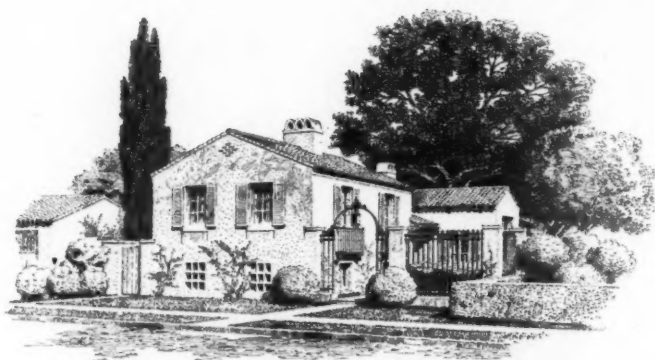
· SECOND FLOOR · PLAN ·



· SECTION ·

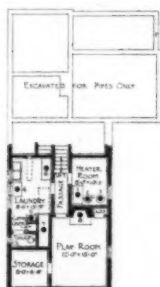
CUB. FT.

MAIN BODIES	1,875.00
DINING ROOM WOOD	1,400.00
POOR	610.00
WALLS AT FRONT	175.00
CHIMNEY	40.00
TOTAL	2,880.00

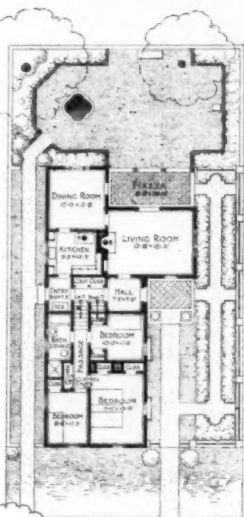


THE HOUSE SHOULD FACE
THE WEST OR THE NORTHWEST

SCALE OF FEET
FOR PLANS AND SECTION



BASEMENT PLAN



FIRST FLOOR AND
PLOT PLAN

GAS APPLIANCES

NUMBERS REFER TO LOCATION
ON PLANS

1. HOUSE HEATER.
2. AUTOMATIC STORAGE
WATER HEATER.
3. GARBAGE INCINERATOR.
4. WASHING MACHINE
5. LAUNDRY STOVE
6. IRONING MACHINE
7. CLOTHES DRIER.
8. FIREPLACE HEATER.
9. FIREPLACE HEATER.
10. KITCHEN RANGE

CALCULATION OF CUBAGE

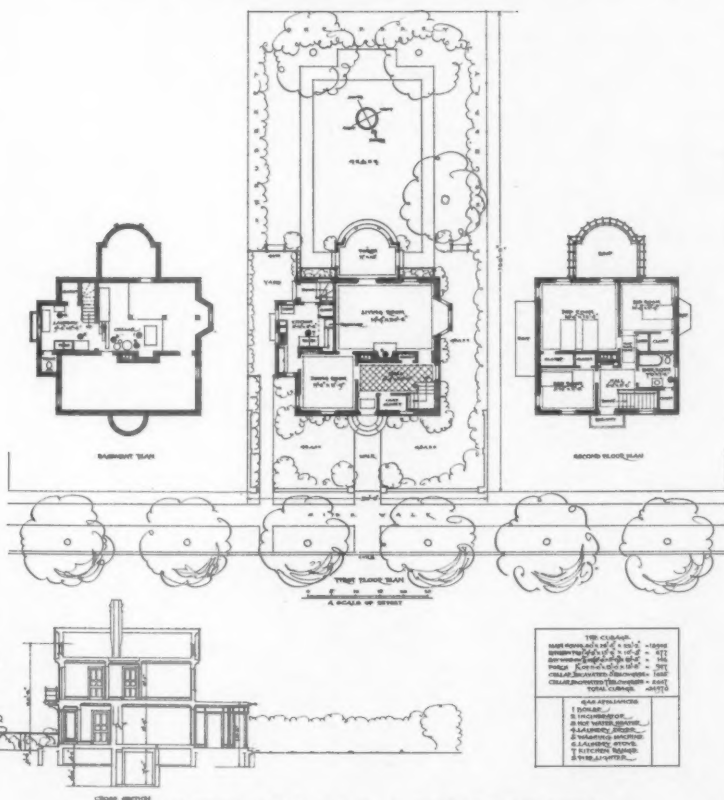
A	225' x 29' x 10'	12,625
B	125' x 14' x 10'	2,250
C	130' x 135' x 10'	4,310
D	180' x 15' x 10'	4,500
E	10' x 10' x 10'	1,000
F	10' x 10' x 10'	50
TOTAL		24,660



LONGITUDINAL SECTION

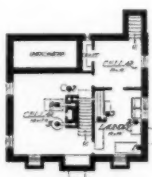
AMERICAN GAS ASSOCIATION SMALL HOUSE COMPETITION

Fourth prize design, American Gas Association Small House Competition

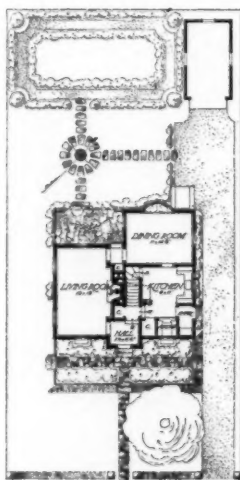


AMERICAN GAS ASSOCIATION SMALL HOUSE COMPETITION

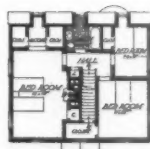
Fifth prize design, American Gas Association Small House Competition



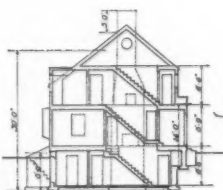
BASMENT FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN



CROSS SECTION

A DESIGN SUBMITTED FOR THE
SMALL HOUSE COMPETITION
CONDUCTED BY



CUBAGE	
200' OF HOUSE	21,200.30' 10,000 C.F.
ENTRANCE PORCH	21.75' 14' 210 "
REAR PORCH	5.3' 18' 200 "
AREA UNDER	13.5' 14.5' 12' 40 "
2-1/2' PORCH	8.5' 15' 30 "
ENTRANCE PORCH	3.5' 12' 31.2' 40 "
CORNER TOP	4' 14.5' 60 "
TOTAL	36,000 "
KEY TO GAS APPLIANCE	
NO. 1. REFRIG. MACHINE	
2	HEATING
3	LARGE FURNACE
4	OVEN
5	GAS RANGE
6	HEATING BOILER
7	WATER HEATER
8	COOKING RANGE
9	FIREPLACE HEATER

THE TIDE OF MEN AND AFFAIRS

SAMUEL INSULL, Jr., was elected president of the Northern Indiana Public Service Company at a meeting of the board of directors. He has been vice-president and assistant to the president for the last three years. Samuel Insull at the same meeting resigned from the presidency and was elected chairman of the board.

H. M. HARRIMAN, who has been assistant to engineer of manufacture, Brooklyn Union Gas Company, Brooklyn, N. Y., is now with the General Engineering and Management Corporation, New York, N. Y.

LEIGH WORTHINGTON is now connected with the Atmospheric Nitrogen Corporation, Syracuse, N. Y. He formerly was with the Detroit City Gas Company.

H. K. SEELEY, formerly employed by the United Gas Improvement Company, Philadelphia, Pa., as assistant to general superintendent, is now with the Syracuse Lighting Company, Syracuse, N. Y.

FRED C. HILL, United Gas Improvement Company, Philadelphia, Pa., has accepted a position with the Hudson Valley Coke and Production Corporation, Troy, N. Y.

ALVIN M. STOCK, superintendent of laboratory, Consolidated Gas Company of New York, N. Y., is now with the Partlow Corporation, of Utica, N. Y.

FRANK FRANCE, who has been connected with the Radiant Heat Corporation, Long Island City, L. I., has joined the Geo. D. Roper Corporation, Rockford, Ill. His mail address is 23 Swain Place, West Orange, N. J.

HUGH L. PEDEN, formerly with the Central Union Gas Company, New York, N. Y., is now with the Northern Union Gas Company, New York, N. Y.

JOHN A. WEISER has been transferred from the Pennsylvania Gas and Electric Company, York, Pa., to the Peoples Light Company, Pittston, Pa. He will be general manager of the Pittston property.

W. C. QUINN, representative, Geo. D. Roper Corporation, Rockford, Ill., is now connected with the Anderson Stove Company, Anderson, Ind.

CHARLES S. PICKEL, assistant superintendent of mains and services for the Central Union Gas Company, New York, N. Y., is now connected with the Northern Union Gas Company, New York, N. Y.

MISS MARJORIE E. PIDGEON, director of Home Service Department, Brooklyn Borough Gas Company, was married on July 25 to F. X. Wardman. Miss Pidgeon will continue in her profession.

FOLLOWING COMPLETION of the sale of controlling interest in the Syracuse Lighting Company, Syracuse, N. Y., by the United Gas Improvement Company, Philadelphia, Pa., to the Mohawk Hudson Power Corporation of Albany, N. Y., several changes in the board of directors and in executive officers of the Syracuse company are announced by James C. De Long, president. C. S. Ruffner, president, and

C. S. Brewer, chairman of the board, of the Mohawk Hudson Power, and Crandall Melvin, of Syracuse, have been elected directors of the Syracuse company. G. I. Vincent, manager of the company, has been elected vice-president. Ernest Johnston, auditor, becomes secretary and assistant treasurer.

R. H. BURDICK, formerly chief engineer of the Electric Bond and Share Company, has been elected vice-president and treasurer of the Genesee Valley Gas Company.

CLYDE H. POTTER, manager of the advertising and publicity department, Southern Counties Gas Company, Los Angeles, Cal., is now in charge of the merchandising department of his company, in addition to his former duties.

OUR NEW MEMBERS

GAS COMPANY MEMBER

Anderson Gas & Utilities Co., Anderson, S. C.

MANUFACTURER COMPANY MEMBERS

Electric Indicator Corp., Stamford, Conn.
Ensign-Reynolds Manufacturing Co., 211 Center St., New York, N. Y.

Detroit Range Boiler & Steel Barrel Co., 2475-24th St., Detroit, Mich.

Duriron Co., Inc., The, North Findlay St., Dayton, Ohio.

Magno Products Corporation, 317-21E 97th St., New York, N. Y.

Prescott & Son, J. B., Tracy Corp., Webster, Mass.

ACTIVE MEMBERS

Brown, Robert E., Northern States Power Co., Mankato, Minn.

Clark, Jr., Charles John, Philadelphia Suburban Gas & Electric Co., Chester, Penna.

Cooke, Miss Adah M., Northeastern Power Corp., Rome, N. Y.

Hueglin, H. C., Federal Profit Sharing Co., Chicago, Ill.

Jenkins, Jay E., Western Gas, Los Angeles, Calif.

Lund, B. O., Northern States Power Co., Stillwater, Minn.

Peck, Bert H., Illinois Power & Light Corp., St. Louis, Mo.

Rogers, James J., Auckland Gas Light Co., Ltd., Auckland, New Zealand.

Russell, Charles C., The Koppers Co. Laboratories, Mellon Institute, Pittsburgh, Penna.

Sexton, Robert H., Own Your Home Exposition, 512 Fifth Ave., New York, N. Y.

Wheeler, James R., Standard Gas Equipment Corp., Baltimore, Md.

Lundt, Ernest C., Consolidated Gas Co. of N. Y., 130 E. 15th St., New York, N. Y.

Thomas, George F., Consolidated Gas Co. of N. Y., 130 E. 15th St., New York, N. Y.

Swenson, Charles Wm., Consolidated Gas Co. of N. Y., 130 E. 15th St., New York, N. Y.

Gelb, Benjamin W., Consolidated Gas Co. of N. Y., 130 E. 15th St., New York, N. Y.

Hartman, William C., Consolidated Gas Co. of N. Y., 130 E. 15th St., New York, N. Y.

Experiences in Team Work

(Continued from page 600)

right. The company had been losing \$42,000 a year in a way which no superintendent had ever noticed.

The telephone company in Chicago got behind in its orders for the installation of telephones. They could not catch up. The installation men worked on a wage schedule which did not permit payment for overtime; but, realizing the situation, they came to the executives and said, "We have a proposition to make. The public doesn't like it. They don't understand it. It isn't a good thing for the company. We will work extra time overtime until we reduce the number of orders to normal," and they put in 60,000 working hours on their own initiative. Why? "In order to protect the reputation and good name of their team, their company, with the public in the city of Chicago. That is what they gave for it, and they are proud of it, and we are proud of them,—proud to be members of the same team." (Vice-President E. K. Hall of the American Telephone and Telegraph Company of New York.)

I do not want to be understood as saying that all public service corporations are run on the lines suggested. It is the same in public service work as in general industry—there are some executives who cannot see good in the newer ways of dealing with employee and public relations. But I do say that practically all of the large companies have adopted most of all the plans which I have outlined and a great body of enlightened executives are moving forward with perhaps as much rapidity as is justified.

To sum it all up in a word, public utilities, having spent years in perfecting machinery and processes and largely neglecting the human factor, have been for some years, and are now, studying men and women and bending every effort in helping them to become better and more efficient employees and citizens. And, so far as the public is concerned directly, while utilities are still suffering from the

misdeeds of the past, they are doing their level best to make amends.

It is quite the fashion to quote Elbert Hubbard. He said: "The valuable man in any business is the man who can and will co-operate with other men. Men succeed only as they utilize the services and ideas of other men." Team work means that all members of the team have a sympathetic understanding of the problems and the policies of the company, its aims and ambitions. Team work gives more soul to a corporation; gives life, enthusiasm, good will, to the members of the team, all of which in turn radiates good will to and from the public.

One of the most heartening signs of our times is the fact that the public is beginning to realize that corporations have souls, that they are playing fair. The employee recognizes that his employer is not a grinding machine, but a helper; the employer has discovered that the employee is a human being like himself, a fellow worker, and that both are members of the same team. Men are now studying men as well as machines and processes. They know perfectly well that men react to certain treatment just as machines and chemicals. The one great rule which has been and is being applied is the Golden one, not in an affected and emotional way, but in a practical, sane way. And so we are all coming to a better understanding of life with men and affairs.

Commerce Year Book

THE Commerce Year Book for 1925, of the Department of Commerce, is now available. Copies may be obtained from any district or cooperative office of the Bureau of Foreign and Domestic Commerce, or from the superintendent of documents, Government Printing Office, Washington, D. C. The price is one dollar.

Where There's a Will

—There's a Slogan

THERE are more than 4100 slogans being used by advertisers today. Of these, one of the most popular is the one the gas companies use, "If it's done with heat, you can do it better with gas."

Affiliated Association Activities



W. S. Yard, President, Pacific Coast Gas Association

Pacific Coast Gas Association

BREAKING all attendance records, all interest records and, in fact, every record of every kind, the Pacific Coast Gas Association adjourned its Thirty-third Annual Convention, a firmer knit and more harmonious body than ever before in its history. The meeting opened on August 23 with an address by F. J. Schafer, President of the Association, who was followed by A. B. Macbeth, Vice-President of the American Gas Association.

The following officers and directors were elected for next year:

President, W. S. Yard,
Vice-President, L. M. Klauber,
Treasurer, D. G. Martin,
Directors—Two Years
W. C. Hornberger,
O. L. Moore,
C. W. Platt,
W. Van Zandt,
One Year
A. F. Bridge,
C. H. Dickey,
J. F. Pollard,
J. L. Stone.

Features of the business sessions which took place on Tuesday, Thursday and Friday, included an exposition of the Blue Star Plan and

progress report of the Appliance Testing Laboratory of the American Gas Association by J. W. West, Jr., Field Representative of that Association, and the following papers:

- "Approaching the Ideal Gas Manufacturing Process," by Geo. Wehrle.
- "Gas Company Merchandising," by C. B. Babcock.
- "Stores Accounting of the Southern California Gas Company," by A. E. Peat.
- "Insulation as a Factor in Gas Househeating," by W. L. Hoyt.
- "Gas Company Tie-in with National Advertising," by W. S. Woodbridge.
- "Coals Suitable for Gas Manufacture in California," by W. W. Odell.
- "Indexing and Filing of Gas Engineering Data," by W. M. Berry and Grace B. Dixon.
- "Tests of Super-refractories in Oil Gas Generators," by H. J. Knollman.

In addition to these there were a number of other papers and reports of committees and an address by Lester S. Ready, Chief Engineer of the California State Railroad Commission.

A great deal of attention was paid to the gas appliance situation and the Association passed resolutions endorsing the Laboratory and Blue Star Plan of the American Gas Association and recommending the appointment of a committee to co-operate closely in the formulation of approval specifications. These resolutions are as follows:

Whereas, The American Gas Association through its Gas Appliance Testing Laboratory has initiated a work which can be of inestimable value to the Gas Industry, and

Whereas, The success of the Laboratory and the so-called "Blue Star Plan," based upon its work, are entirely dependent upon the close co-operation of gas appliance manufacturers and gas companies, be it

Resolved, That the Pacific Coast Gas Association endorses the plans of the American Gas Association and urges its manufacturer member companies to submit their appliances for approval and its gas company members to take steps to initiate and further the "Blue Star Plan" in their respective territories.

* * * * *

Whereas, The question of the proper design and installation of gas appliances is becoming more and more important to the future of the gas industry, and

Whereas, During the past two years this Association has had committees engaged in a

study of two phases of the gas appliance situation—one involving an investigation of the quality of gas appliances being offered the public, and the other an investigation of the possible improvement of the character of gas appliance installations by means of municipal ordinances, and

Whereas, The progress being made by the Laboratory of the American Gas Association no longer warrants further pronouncements by this Association in regard to the quality of gas appliances, but does not offer aid in the solution of installation problems, be it

Resolved, That the Association direct its officers to appoint a committee to continue the study of the gas appliance situation with special reference towards issuing information on installation methods, and that this committee be also empowered to fulfill such functions heretofore held by the Appliance Certification Committee as may be considered meet and proper under developing circumstances.

The Association also discussed the feasibility of adopting a recommendation made by L. M. Klauber, Chairman of the Committee on Cooperation with Educational Institutions, that a research fellowship be established at the University of California. As a result of this discussion the Board of Directors was empowered to appropriate \$1,000 for the purpose of providing for this fellowship starting in 1927. The fellowship will be open to students in all Pacific Coast universities but they will be asked to do their work at the University of California where the Association has already provided a large amount of equipment.

The Pacific Coast Gas Association has a series of Gold Medals which are awarded each year to papers and committee reports which, in the judgment of a special Awards Committee, comply with certain high standards. Two medals were awarded this year, both being in the Technical Section. One went to E. L. Hall, for a paper entitled, "Oil Gas Manufacture for Peak Load Conditions," which was read at the San Francisco Sectional Meeting of the Association in November, 1925, and the other went to the Committee on Liquid Purification for a report on "The Sulphur Recovery Process of Liquid Purification," which process was largely developed by the Pacific Gas & Electric Company. The committee receiving the award had the following personnel:

K. N. Cundall,
Van E. Britton,
R. H. Hargreaves,
Elton Hogg,
M. M. Katz,
Ludwig Rosenstein.

Several papers and committee reports received honorable mention.

The Commercial Section was awarded the Basford Trophy which goes each year to the section which is judged to have presented the most constructive program. C. M. Grow of the Southern California Gas Company, Chairman of the Commercial Section, received the trophy for his section.

Clinton A. Smith, a post-graduate student of the University of Nevada, won the Association's Thesis Prize of \$100 for his thesis entitled, "Development of a House Heating Load in Reno, Nevada."

Luncheon meetings of the entire Association attendance were held on Tuesday and Thursday, features of which were stunts, community singing, and a series of three-minute speeches for which trophies were awarded. At the Tuesday luncheon there were eight three-minute speakers, two for each section of the association, the subject assigned being "What My Section Has Done for the Gas Industry This Year." This contest was won by D. C. Ray. J. Earl Jones, Assistant Sales Manager of the Portland Gas & Coke Company, received the second highest number of points and J. C. Hayden received third. At the Thursday luncheon there were ten speakers and the subject was "What Is the Greatest Present Need of the Gas Industry?" W. C. F. West, Jr., received the highest score, while Paul A. Patchen and W. M. Henderson, both of the above company, received second and third respectively.

Another feature of the Convention which was particularly popular was a daily newspaper edited under the title *Balloon Juice* by D. L. Scott. The paper contained all Convention announcements and was replete with humorous comments on those in attendance and what they were doing. Mr. Scott also acted as master of ceremonies at the two luncheon meetings.

W. S. Yard, President-elect of the Association, won the Babcock-Pedersen-Basford Cup for the low gross golf score and will hold this trophy until the next convention.

At the banquet on Friday night which closed the Convention, Mr. Yard announced that the following would lead the Association committee work during the coming year:

Accounting Section, E. N. Simmons,
Commercial Section, C. M. Grow,
Public Relations Section, D. L. Scott,
Technical Section, R. M. McCalley.

Wisconsin Utilities Association

A CONSTRUCTIVE program for better relations with contractor dealers and plumbers, getting gas merchandising on the right basis and doubling up the output by industrial gas and house heating was presented at the Commercial Section Convention of the Wisconsin Utilities Association, held at Green Lake, Wis-



*M. S. Bandoli, Chairman, Commercial Section,
Wisconsin Public Utilities Association*

consin, on September 9 and 10 with 150 members in attendance. The American Gas Association's general plans and aims regarding commercial activities were presented by H. D. Valentine of The Peoples Gas Stores, Chicago. The subject of "Better Relations with Dealers and Plumbers" was presented by C. A. Dow, of the Northern States Power Company.

The difference in the problems in the gas and electric fields was pointed out emphasizing the fact that the plumber is depended upon the water utility for his existence, and his interest in the gas utility is secondary while an electrical contractor must depend on the electric utility entirely for making his field of operations possible.

An interesting summary of co-operative plans in use in various sections of the country was presented. A discussion of this subject from the gas jobber's viewpoint was presented by L. E. Spear, of the Humphrey company, whose contact with conditions throughout the country made it possible for him to give a great deal of first hand information on co-operative work that is going on in various parts of the country.

C. A. Pepper, of the Wisconsin Public Service Corporation, presented the recommendations of the Gas Merchandising Committee for putting gas merchandising on the right basis. He recommended strict adherence to the periods covered by special sales and a long enough interval between sales to properly follow up prospects and keep up salesmen's morale. He stressed the advertising of quality and servicing of the appliances. Premiums should only be used in dull periods and only the highest quality of appliances should be handled. Time payments should never exceed twelve months. The use of an industrial engineer and a home service department was recommended.

A. A. Schuetz, of the Milwaukee Gas Light

Company, in discussing the house heating situation stated that gas for house heating has come to stay and that the experimental period has passed. House heating is being studied as it never was before, and with the numerous advantages in favor of gas for house heating, extensions of this service are being ordered at a rate which is constantly increasing.

One of the features of the program was a play entitled "A Day with the Home Service Workers," written especially for this occasion and presented by six Home Service workers and two men who took the parts of general manager and new business manager. Miss Zella Patterson, of the Menominee and Marinette Light and Traction Company, took the part of the Home Service worker while Miss Ruth Miller, of the Wisconsin Public Service Corporation, acted as her assistant. Mrs. Ella Liner Lambert, of the Milwaukee Gas Light Company, Miss Frances Lauder, of the Madison Gas and Electric Company, Miss Betty Fox, of the Wisconsin Power and Light Company, and Miss Arline Halblieb, of the Northern States Power Company, took the parts of four women customers. A. F. Andrews, of the Fagan Andrews Company, as general manager and A. J. Gallagher, of the Wisconsin Public Service Corporation, as new business manager, completed the cast.

Officers elected for the ensuing year are: M. S. Bandoli, Northern States Power Company, Eau Claire, Chairman, with Frank A. Coffin, of the Milwaukee Electric Railway and Light Company, as Vice-Chairman.

Empire State Gas and Electric Association

THE program for the twenty-second annual convention of this Association as announced in the September MONTHLY should attract a goodly number of gas men to the Lake Placid Club, N. Y., October 4 and 5. In addition to the well-planned business sessions the entertainment features are promising. The Entertainment Committee consists of F. B. Steele, H. O. Palmer and W. J. Welsh. It will be assisted by Mrs. E. C. Scobell, who will handle a ladies' golf tournament, and by Mrs. F. B. Steele, Mrs. Herman Russell, and Mrs. H. M. Brundage as a sub-committee in charge of the card parties.

New Jersey Gas Association

THE Entertainment Committee staged the usual annual outing of this Association at Hotel Bellevue, Sea Isle City, N. J., on September 13, 1926, and did a good job of it. For the first time in years the weather man favored the Association for the occasion. The events were run off in quick succession and afforded good sport. A splendid dinner was presided over by President L. N. Yetter and speeches were made by the Mayor of Sea Isle City, Jacob B. Jones and H. H. Ganser.

Of Interest to Home Service Workers

NO more supperless suppers for summer widowers was the motto of the Providence Gas Company, Providence, R. I., in providing a noon-day cooking school for business men. Five lessons were held during August and the first part of September.

Busy business men, young, middle-aged, and old, sat absorbed during the classes, not only learning the fundamentals of how to get something to eat while their wives were away,

but asking for lessons in biscuit making, etc.

In conducting the classes the men were given printed recipes much like those given out to the women's classes. Each lesson was limited to one-half hour. As originally mapped out, the classes were to deal only with the fundamentals, but since the men asked for additional information, fancy cooking was included.

Miss Atkinson, home service director, reports that one week after the first class was held, a woman came in and asked for "a recipe sheet like the one her husband had."

Miss Gladys Peckham, director of home service for the Norwich Gas and Electric Company, Norwich, Conn., has just graduated a class of 53 women. The company has been making efforts to reach the foreign element of the town, and since the majority of the graduating class were foreign, Polish, a very commendable start has been made.

"These people are not easily enticed into our lecture rooms," says Miss Peckham. "So we organized a class to meet in the kitchen of their own community house."

Miss Dorothy E. Shank, formerly of Teacher's College, Columbia University, New York, N. Y., has been appointed to the position of director of the research kitchen of the American Stove Company, to succeed Miss Charlotta Greer.

Miss Greer is to return to her former position as head of the department of foods and household management at the East Technical High School, Cleveland, Ohio. All home service directors are familiar with Miss Greer's oven canning chart.

CONVENTION NOTE

THOSE who haven't returned their reservation cards for the home service luncheon at the Shelburne Hotel on Wednesday, October 13, are requested to do so immediately. This luncheon will be one of the most interesting meetings for the directors at the Atlantic City Convention. A special program has been arranged, but announcement of the features will not be made until later.

Send your card to Miss A. Deane Dowell, home service counsellor, American Gas Association, 342 Madison Ave., New York, N. Y.

Home service directors are requested to bring their aprons with them to the American Gas Association Convention, Oct. 11 to 15, at Atlantic City. The home service committee is serving tea in the ball room on the Million Dollar Pier on Tuesday and Thursday afternoons.

At the opening of the home service classes at the New Haven Gas Light Company, New Haven, Conn., on Sept. 8, the auditorium was filled to capacity. Mrs.

Frances Mathis, director, has had the auditorium entirely redecorated.

The following letter was received at Association Headquarters from Ophelia Lewis, home service director, Southern Gas and Power Corporation:

"My company owns nineteen plants, and I am the only director for my company. Since last August (1925) I have just had to touch in the high spots and now I am insisting that they give me a few assistants. I have covered thousands of miles on the train and in my Ford from Port Arthur, Texas, to Deer Park, Maryland, for the company, so that you can see that my work could not be carried on like it should be in each place.

"For ten years I did work only for the Augusta plant and the people here are continually calling on the home service department. I hope to soon have it the same way in all of our plants and to have directors to take care of the work where the company is large enough to warrant it."

COMPANY CHANGES

THE CLAUS AUTOMATIC GAS COCK COMPANY, Milwaukee, Wisc., has sold its entire assets to a new firm known as the Claus Manufacturing Company.

THE SORCO MANUFACTURING COMPANY is now known as the Gas Refrigeration Corporation, Scranton, Pa.

When Co-operation Spells Success

Report of Home Study Course on Manufactured Gas at Columbia University to Be Made at Annual Convention at Atlantic City

By PROFESSOR JEROME J. MORGAN
Columbia University, New York, N. Y.



Prof. J. J. Morgan which was discontinued December 31, 1923. It was announced and described in a circular sent to all the individual members of the American Gas Association during August, 1925.

In the preparation and conduction of the course, I have had the active assistance of an advisory committee representing the Committee on Education of Gas Company Employees, consisting of the following eminent gas engineers.

- A. E. Forstall, Consulting Engineer, New York, N. Y.
- C. E. Paige, Vice-Pres., The Brooklyn Union Gas Co., Brooklyn, N. Y.
- F. C. Weber, Gas Engineer, Cities Service Co., New York, N. Y.
- W. S. Yard, Vice-Pres., Pacific Gas & Electric Co., San Francisco, Calif.

It is a very great pleasure to acknowledge at this time the helpful co-operation of these gentlemen in all the matters pertaining to the work. They have constituted an advisory committee in fact as well as in name.

I am very glad also to express my appreciation of the co-operation of Kurwin

THIS course grew out of a request coming to the American Gas Association Headquarters for a correspondence course on gas manufacture to take the place of the Gas Trustees' Course,

R. Boyes, Secretary of the Committee on Education of Gas Company Employees, whose advice and aid have contributed very materially to the success of the course.

The course, as described in the circular, consists of 24 lessons, the first 12 dealing with the problems of producing and preparing for distribution the main types of manufactured gas. The remaining twelve deal with distribution and utilization of manufactured gas, as well as with questions of accident prevention, statistical accounting, rate making and public relations. It is planned that these twenty-four lessons should constitute two years' work for a man who has had a high school education including one year of chemistry and physics, and who is employed in the gas business.

The active work of the course started on October 1st, 1925, at which time the material for Lessons One and Two was mailed to about 100 men whose enrollments had been accepted at that time. Since then a total of 944 men have enrolled, from which number there has been withdrawn for one reason or another 44 men, giving a net enrollment to date of 900.

At the time the course was started, three lessons were actually printed and two more were partly prepared. Since then lessons up to and including Lesson Ten have been prepared and sent out to those students who are ready for them. Lesson Eleven is now being printed and Lesson Twelve will be ready about October 1st, the end of the first year. From

then on, it is expected that the lessons will be ready for mailing at the rate of one lesson a month.

It soon became evident, as the enrollments kept coming in, that, in addition to the very competent stenographic and clerical help which I had from the Science Department of Home Study, I would have to have a technical assistant in carrying on the work of the course. I was therefore very fortunate, February 10th, in obtaining the services of W. Clifford Witham, a graduate in the Chemical Engineering Course at Purdue University, 1924, and later an employee of the Northern Indiana Gas & Electric Company, of Hammond, Indiana. With Mr. Witham's untiring assistance I have been able to attend to all matters in the organization and conduction of the course and at the same time prepare the advance lesson material.

When the course was first outlined, it was thought that one or two of the current textbooks on manufactured gas might be used. As these were considered more carefully, it was evident that the use of any combination of them would necessitate a very great deal of supplementary writing in order to present up-to-date American practice. It was decided, therefore, to write a textbook for special use in the course. This textbook, "Manufactured Gas, Its Production, Distribution and Utilization," I am writing and having printed in pamphlet form. It is sent out to students enrolled in the course along with the other lesson material. To date, 446 pages, forming the basis for Lessons One to Eleven and equivalent to more than 1000 typewritten pages, are completed. It is fully illustrated and aims to present up-to-date American gas practice. When completed, October, 1927, it will consist of two volumes of about 500 pages each.

In the preparation of this text I have had not only advice and constructive criticism from Messrs. Forstall, Page, Weber and Yard, but also a very generous co-operation in the supplying of information and illustrated material by gas company officials and manufacturers of gas machinery as well as by committees of the American Gas Association. I am very glad of this opportunity to express publicly my thanks for this help.

As has been outlined above, the need for the course was recognized by the American Gas Association. A great deal of aid in securing enrollments and in collecting and assembling material to be used for instruction has also come from the Association through its staff, its committees and individual members. It was, however, the organization of the Home Study Department of Columbia University that rendered possible the presentation of the course in its present form. It was also the smooth working machinery of the Home Study Department that permitted the organization and conduction of a class of 900 in which each member of the class receives instruction directly from the technical men in charge of the course. No small share in the credit for the development of the course is due to the organization of the Home Study Department and the writer takes pleasure in acknowledging the hearty co-operation which he has received from members of the Home Study Staff who have thus contributed to the success of the course.

In carrying on the work of the course, one problem has been to get the men to submit their lessons regularly and within reasonable periods. In this connection several follow-up letters have been sent out, both by the University and the Association, to men who are taking the course.

(Continued on page 626)

Date	1	2	3	4	5	6	7	8	9	Totals
Oct. 1-Dec. 31, 1925	459	171	63	4						697
Jan. 1-Mar. 6, 1926	164	232	191	100	46	8				741
Mar. 7-Apr. 24, 1926	69	124	125	132	99	65	8			622
Apr. 25-May 27, 1926	29	51	64	64	57	65	66	9		405
May 28-June 30, 1926	13	16	42	42	54	47	52	51	15	332
July 1-July 31, 1926	7	12	20	30	35	32	30	36	35	237
Totals	741	606	505	372	291	217	156	96	50	3034

ACCOUNTING SECTION

D^RWITT CLINTON, Chairman

ALBERT L. TOSSELL, Vice-Chairman

H. W. HARTMAN, Secretary

Simplicity in Customers' Accounting

Southern California Gas Company Finds the Stub Plan
Has Many Advantages Over System Previously Used

By A. E. PEAT

Treasurer, Southern California Gas Company, Los Angeles, Cal.

THE customers' accounting system being instituted throughout the Southern California Gas Company's offices may be variously defined as the "stub plan," "bookkeeping without books," and the "Baltimore system." It is a modification and refinement of the bookkeeping plan first devised by the Consolidated Gas, Electric Light and Power Company, of Baltimore, Md., and now adopted by a number of major utilities over the United States.

By the technique of the stub plan, bulky chronological ledger records are eliminated; duplication of effort is curtailed, and the operating efficiency of the entire department is raised. The keystone of the system lies in one fact: That approximately ninety per cent of all accounts are paid before the next month's bills are rendered. Thus, it becomes manifestly more logical to deal with the delinquent minority of ten per cent as an exception, recording such unpaid accounts, than to

go through the interminable routine of debiting and crediting charges and payments which are, in reality, no more than deferred cash transactions. By this means only one-tenth of the actual record keeping is required, as compared with the ledger system.

The customers' accounting plan was designed for the company by Karl Jorgensen, and installed under the supervision of F. C. Ingram, manager of the customers' department, with the assistance of W. O. Mulligan. Mr. Jorgensen has investigated the "Baltimore plan" and the accounting methods of more than a dozen other large corporations, in connection with researches conducted by the Bureau of Commercial Economics, Industrial Engineers. After his work in connection with an analysis of accounting procedures for The Peoples' Gas Light and Coke Company, and the Commonwealth Edison Company (which corporations have since adopted the stub



Redondo office

*Karl Jorgensen*

plan) Mr. Jorgensen analyzed the Southern California Gas Company's accounting conditions, and recommended that a similar bookkeeping system, with certain modifications and refinements necessitated by varying local conditions, be adopted here.

In March, 1926, a trial installation of the stub plan of accounting was made in the Redondo division office, under the supervision of W. O. Mulligan and M. A. Bentley, district agent at Redondo. Its adoption there demonstrated the system's practicability, which has been evidenced by tangible payroll deductions and increased departmental co-ordination. In consequence, the company resolved to install the stub plan in its main office and in the other local divisions. In June the accounting procedures of the San Bernardino, Redlands, Riverside, and Van Nuys offices were transferred to the new basis, and it is expected that the plan will be put into effect in Los Angeles early in 1927.

*F. C. Ingram*

The stub plan operates in the following manner: An extra stub is added to the monthly bills, containing much the same information as the ordinary customers' stub. This is detached before presentation, and filed in lieu of ledger entry.

As bills are paid, the cashiers' record representing these payments are checked and balanced against the cash receipts for the day, and sorted into place in the current cash stub file. Here they remain until the posting date, at which time they are matched against the corresponding ledger records for each particular book. The ledger records thus matched represent accounts paid in full for the current month's charges and are filed separately from those delinquent.

The remaining ledger records, representing accounts for which a corresponding cash record has not been found, are bound together as a permanent recording of the unpaid balance. The closing bills for each book which have not yet been

collected are listed, this list being affixed to the unpaid ledger record. In this way the ledger record remains in its proper place until it is either paid or charged off, and the re-writing of such records is consequently avoided.

Under this system the meter-reading record becomes one of the most important keys for information, supplanting the former customers' ledgers. In this record is incorporated all billing and meter data, and it constitutes a complete chronological record of individual accounts, with the exception of cash transactions. The book is not out of the department for more than one day a month—the day when meters are read. At that time it is in the hands of a meter reader who has specific instructions to handle the book with greater care than usual and to make all entries as neatly and legibly as possible. The paper used is of a quality better than that ordinarily applied to this purpose, as it becomes a source of constant reference for practically all information required in handling customers' accounts.

In many respects accounting becomes

more accurate under the revised plan. This is specifically demonstrated in the balancing of ledgers, where it is found that about eight out of ten books under this system are balanced without re-check for errors. When it is necessary to check, such a process becomes much simpler than under the previous system. The reason for this lies in the facts that original records are used in balancing, and that the elimination of a transferring of these figures as debits and credits has reduced the possibility of errors to a minimum.

The "cycle method" of balancing customers' accounts is employed, as was the case under the previous system. Each meterbook is balanced at the time the cash is posted for the month, on the day before the book is taken for reading. Operations in connection with such work are much simpler and easier than they were under the old plan. It is not necessary to leaf through a volume of ledger cards in order to segregate unpaid items, as these are all together, sewed in a pack which shows the exact amount of unpaid bills outstanding. All that then remains



Customers' accounting at Redondo—W. O. Mulligan, demonstrating Stub Plan accounting equipment

[illegible]

Meter-reading-record key-sheet

for effecting a balance is to deduct the amount outstanding from that of the previous month, add whatever miscellaneous earnings there may be for the current month, and deduct cash received up to the billing date. This remainder should then balance against all unpaid items grouped in the delinquent account ledger.

An additional advantage of the revised system is its elimination of the necessity for separate compilation of net earnings. The total of such revenue may, under the stub plan, be directly derived in one operation from the monthly bills with the new Burroughs utility machine.



Work of the collection department, too, is facilitated by the fact that all delinquent accounts, being automatically seg-

regated, are directly at hand.

The clarity and simplicity of the stub plan are becoming manifest even to those unacquainted with accounting procedures. It is believed that the system's elimination of duplicated effort will be markedly reflected in time to come by a constantly decreasing unit-cost, matched by a corresponding increase of facility and accuracy in departmental mechanism.

Correction

AN error was made on the Who's Who page in the September issue of the MONTHLY. Mr. Gadsden graduated from South Carolina University in 1888, instead of 1868, as was reported.

 SOUTHERN CALIFORNIA GAS COMPANY 800 PARK ROAD SIGHT PO BOX 8301		SERVICE FROM: _____ TO: _____ BY: _____		 COMPANY'S RECORD CUSTOMER: _____ ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____		COLLECTION METHOD SOUTHERN CALIFORNIA GAS CO. 800 PARK RD. SIGHT PO BOX 8301		LASTED MONTH _____ _____ _____		REMARKS _____ _____ _____	
GAS BILL { THE FOLLOWING IS THE SUMMARY OF THE BILL FOR THE MONTH OF _____ }		PREVIOUS BILL NUMBER: _____ PREVIOUS BILL DATE: _____		PREVIOUS BILL AMOUNT: _____ PREVIOUS BILL PERIOD: _____		PREVIOUS BILL TYPE: _____ PREVIOUS BILL STATUS: _____		PREVIOUS BILL TYPE: _____ PREVIOUS BILL STATUS: _____		PREVIOUS BILL TYPE: _____ PREVIOUS BILL STATUS: _____	

Revised form of monthly bill

PUBLICITY AND ADVERTISING SECTION
F. L. BLANCHARD, Chairman **A. W. HAWKS, Jr., Vice-Chairman**
CHARLES W. PERSON, Secretary

Tell Them Continuously—Not Spasmodically

Outdoor Advertising Has a Duty to Perform for Gas Companies
 Interested in Increasing Sales

By **H. R. STERRETT**
 Manager, Des Moines Gas Company

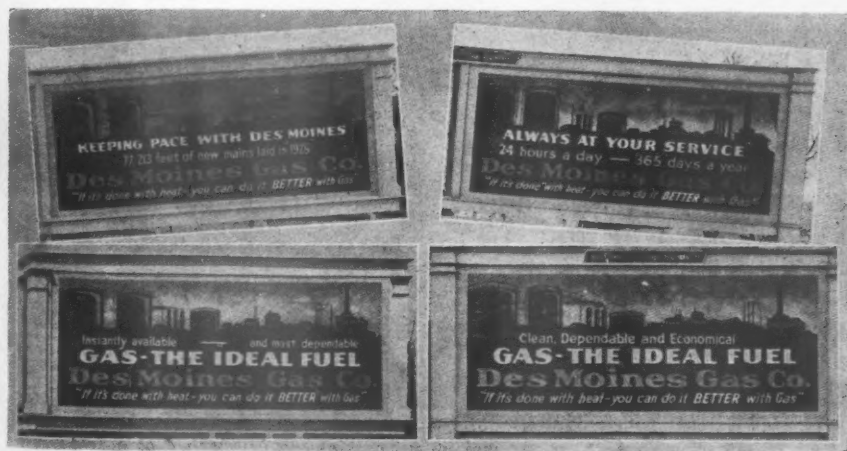
THIS statement was made by Philip H. Gadsden recently in addressing the convention of the Mid-West Gas Association in Des Moines. It very readily applies to outdoor billboard advertising, since this form of advertising is of necessity more or less continuous.

Good-will or policy advertising through the medium of newspapers or by direct mail is usually more or less spasmodic, due to the relatively high cost. The value of policy advertising through newspapers is questionable unless there is some local important issue, such as rates, franchise, etc., where the company wants to tell the public the facts in the case. In order to attract much attention, the ordinary good-will advertisement in a newspaper must be of a striking nature

or cover an issue in which the reading public is vitally interested.

On the other hand, an attractive billboard advertisement, if properly located, will invariably draw the attention of a large percentage of those passing it. We are all familiar with the marked development in the art of outdoor advertising during the past few years.

In Des Moines we are trying outdoor advertising for the first time and the four boards shown in the accompanying illustration have already attracted much attention and caused some favorable comment. Each board is located so that it is on the right hand side of a principle line of travel, where it can be observed by both street car riders and those passing in automobiles. The picture on each board is the same, depicting a night view



Attracting public attention with billboards is one way

MANUFACTURERS SECTION

WATSON E. DERWENT, Chairman

W. E. STEINWEDELL, Vice-Chairman

C. W. BERGHORN, Secretary

The Laboratory—Its Accomplishments

Activities of the Past Year Presage Much for the
Future of Gas Service in America

By R. M. CONNER

Director, Testing Laboratory

WITHIN the last few years more combined thought and effort have been expended on the development of space heaters than any other major type of gas appliance on the market. This condition can probably best be explained by the fact that such types of equipment are relatively new and as yet lack any marked degree of standardization. It is not the purpose of this article to comment on the relative merits of space heaters. Yet, the writer feels that there is a distinct field of service for appliances of this kind and believes that the demand for them will be met by many of our aggressive appliance manufacturers.

Owing to the fact that the usual type of space heater is installed for heating occupied rooms where there is a possibility of the customer breathing the products of combustion, prominent gas appliance engineers and all of the American Gas

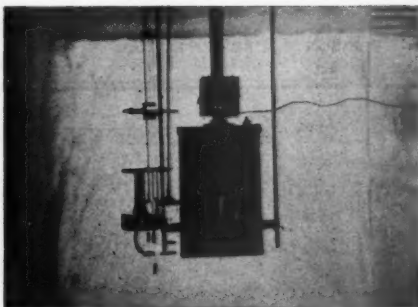
Association's appliance committees felt that the combustion requirements for such devices should be made much more severe than for other types of appliances. Therefore, in addition to the ordinary open-room test designed to determine the completeness of combustion, closed-room tests also were specified, the latter for the purpose of determining the operation of the heater in a reduced oxygen supply.

PROTECTING THE CARELESS

It is common knowledge that most types of space heaters are often required to function in small and almost hermetically sealed rooms. Scientific investigations have often disclosed conditions where they were forced to burn in rooms in which the normal oxygen supply had been reduced to about 18 per cent. The physiological effects of such an atmosphere on the human system would produce no harmful results. On coming into



Staff of the A. G. A. Testing Laboratory



Left: space heaters for use in research. Right: Haldane gas analysis apparatus for determining accurately small percentages of CO₂.

such a room from the fresh air its contents might at first appear rather "stuffy," but after short exposure a normal person would become accustomed to such conditions and feel no ill effects. An atmospheric condition of this kind does have a decided effect on the operation of some types of space heaters, however, and it was with the idea of safeguarding the user even from his own carelessness that such drastic approval tests were specified.

RADIANT EFFICIENCY

There is no doubt but that a space heater securing the Laboratory's approval should give safe operation and long service if it is properly installed and is regulated with reasonable care. In addition to substantial construction, all of our performance tests insure a wide range of flexibility in operation. Further, fireplace heaters must possess a relatively high radiant efficiency. Appliances such as hot air and gas steam radiators will be given an hourly B.t.u. rating which will appear on the manufacturer's certificate of approval. It is possible later on that cities adopting gas ordinances may require that each heating appliance must bear a tag showing its heating capacity as determined by some impartial body such as our Testing Laboratory.

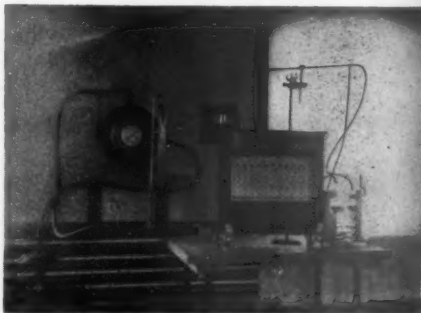
Space heater manufacturers will be required to mark their approved appliances with the Laboratory's official marking seal. This seal will be identical in design to that specified for gas ranges except

that it will probably in most instances be smaller. The first appliances labeled in this manner will be exhibited at our annual convention.

THE BLUE STAR PLAN

Inquiries from far and near are being received on the Blue Star Campaign for sales stimulation. Gas companies, gas associations, and appliance dealers' associations are endorsing the American Gas Association's efforts to raise the standards of gas service. Manufacturers of approved appliances will find in the Laboratory's official marking seal unlimited advertising possibilities which they will undoubtedly capitalize.

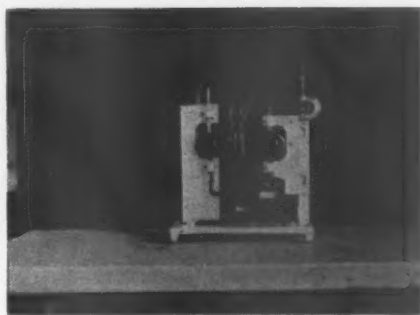
A special committee of our Association has under consideration national publicity for the gas business. N. T. Sellman, Engineer of Utilization of the Consolidated Gas Co. of New York and a member of



Determination of cubic feet of combustion by use of Wahlen gauge

the Laboratory Managing Committee, is one of the representatives of the Industrial Gas Section on the advertising committee. We should give in every possible way wide publicity to the Laboratory's efforts to acquaint the public with the fact that in purchasing gas appliances they should first look for the official marking seal. These efforts should not only benefit the manufacturer of better types of appliances but also go a long way toward relieving the present maintenance and service responsibilities of the gas companies. Further than this the use of approved appliances should mean better satisfied customers, and, in the end, greater sales of gas.

The latest list of approved appliances indicates that the American Gas Association's Laboratory has tested and approved from inspection or test 14 different types of flexible gas tubing and 1373 gas ranges, and 14 space heaters—one year's work. Out of fairness to all space heater manufacturers it was decided to withhold the issuance of approvals on



Wahlen gauge for determining velocities of stack gases

appliances of this type till October 1st.

This action was taken so that every manufacturer would have ample opportunity to submit his equipment for test.

Approval requirements for water heating and central house heating appliances are now being placed in tentative form and should be offered to the industry for

criticism very shortly. It is estimated that by the first of next year approval tests will be under way on all the major types of domestic gas appliances. This progress can be attributed almost entirely to the generous financial and moral support given by the gas companies and the hearty co-operation received from our manufacturer members.

A NATIONAL MOVEMENT

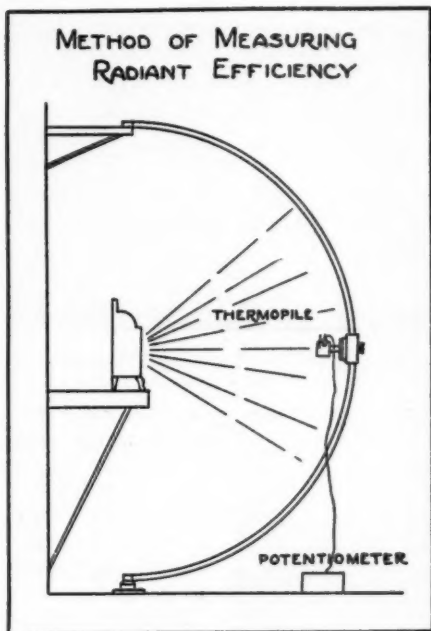
Our Association should be proud of the fact that the gas industry is the first large business to create a national testing laboratory for the benefit of all its people who are directly or indirectly interested in the utilization of its product. Its establishment is a tribute to the vision of those men who conceived the idea years ago and who have worked so diligently and



Main laboratory



Air-tight test room used extensively in space heater tests



unselfishly throughout the past few years to effect its realization.

INDUSTRIAL GAS BOOKS FOR SALE

THE ASSOCIATION now has for disposal a complete series of industrial gas books. They are:

Bakeries, Hotels and Restaurants
Combustion
Food Products
House-Heating
Industrial Data Sheets

The price of the books is \$1.50 a copy to A. G. A. members, with the exception of the Industrial Data Sheets which are seventy-five cents a set. Special prices can be quoted on lots of thirty or more.

A Letter of Interest

CITY OF BALTIMORE
Maryland

Municipal Departments
Health Department

Gas Circular Letter No. 13

August 12, 1926.

TO MANUFACTURERS OF GAS RANGES AND COMBINATION GAS AND COAL RANGES

AND

TO GAS APPLIANCE DEALERS OF BALTIMORE CITY:

On and after January 1, 1927, there will be no list of Temporarily approved gas ranges, i.e., on and after January 1, 1927, all gas ranges and combination gas and coal ranges sold, offered for sale, connected, or installed in the City of Baltimore must be covered by a certificate of approval, satisfactory to the Commissioner of Health stating that the said range conforms with the specifications of the American Gas Association.

Manufacturers, therefore, who market their ranges in this city are hereby advised that unless their sample ranges are submitted for test at the earliest possible moment, and certainly by no later than October 1, 1926, there is every possibility that tests cannot be completed by January 1, 1927, and all such untested and unapproved ranges will be debarred from sale in Baltimore City.

Baltimore dealers may refer to the monthly publication of tested, approved and registered appliances and be guided accordingly in the matter of their stocking of gas appliances. Dealers who now have in stock gas ranges not yet tested, approved and registered are advised to take the matter up with the manufacturer at once so that on January 1, 1927, they will not have on hand unregistered appliances which shall not, after that date, be sold in this city.

Very truly yours,

M. H. Coblenz,

Chief, Division of Chemical Technology.

List of Approved Space Heaters as of October 1st, 1926

Model No.	Trade Name	Manufacturer
515.....	Golden Glow.....	American Stove Co., Reliable Stove Co. Div.
525.....	Golden Glow.....	American Stove Co., Reliable Stove Co. Div.
4 Col. 12 Sec. 38" Unvented	Clow Gas Steam Radiator	Clow, James B. & Sons
4 Col. 10 Sec. 26" Unvented	Clow Gas Steam Radiator	Clow, James B. & Sons
4 Col. 8 Sec. 22" Unvented	Clow Gas Steam Radiator	Clow, James B. & Sons
3 Col. 12 Sec. 38" Unvented	Clow Gas Steam Radiator	Clow, James B. & Sons
3 Col. 10 Sec. 26" Unvented	Clow Gas Steam Radiator	Clow, James B. & Sons
4 Col. 11 Sec. 38" Vented	Clow Gas Steam Radiator	Clow, James B. & Sons
4 Col. 9 Sec. 26" Vented	Clow Gas Steam Radiator	Clow, James B. & Sons
20.....	Radiantfire.....	General Gas Light Co.
30.....	Radiantfire.....	General Gas Light Co.
710.....	Reznor.....	Reznor Mfg. Co.
5X.....	Reznor.....	Reznor Mfg. Co.
31G.....	Welsbach.....	Welsbach Co.

INDUSTRIAL GAS SECTION

FRANK F. CAULEY, Chairman

C. W. BERGHORN, Secretary

CHARLES C. KRAUSSE, Vice-Chairman

Heating Causes Rivet Failure

Heating to Over 1950 F. Produces a Structure Unable to Withstand Rapid Alternate Compression and Tension

By A. L. SPENCER, JR.

Pittsburgh Screw & Bolt Co., Pittsburgh, Pa.

WHEN rivets break in driving or thereafter, if not subjected to severe outside stresses, the general tendency is to place the blame on the quality of the steel or the method of manufacture of the rivets. Chemical, physical and microscopic investigations of the broken rivet samples submitted from time to time by various rivet users have failed, however, to disclose anything in the quality of the steel or in the method of rivet manufacture to account for the failures.

Almost invariably the fractures of sample broken rivets illustrating complaints show that the failure occurred at a comparatively high temperature. The fractures present a dull lusterless appearance with little or no reduction of area. Sample of broken rivet F at the extreme left of Fig. 1 is a broken rivet returned to the rivet manufacturer illustrating a complaint and is representative of the majority of failures. In some cases the failure occurs under the head as illustrated by the specimen at the extreme right of Fig. 1.

A specific investigation of complaints

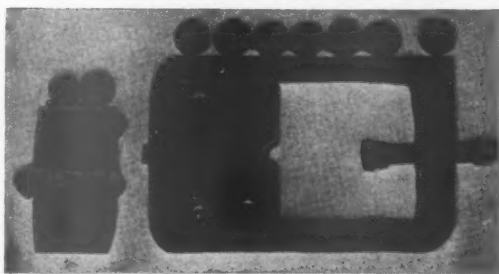


Fig. 1—Device Used For Testing Opposed Stresses in Driving Rivets. After the Rivets Are Driven, the Two Half Sections of the Die Are Opened and the Rivet Removed For Inspection.

The Broken Rivet "F" Shown at the Extreme Left Was Returned to a Rivet Manufacturer and Is Typical of the Majority of Failures. Other Specimens Are Shown at the Top.

stresses during riveting. It is the purpose of this paper, therefore, to discuss these conditions.

The tendency of coal or coke forges used for rivet heating is the inability of maintaining a sufficiently deep bed of fuel with the result that the hot rivet is subjected to the direct action of the flame produced by the air blast and is likely to be overheated or burned in a few seconds under this extremely oxidizing condition. When burning occurs, it is readily apparent, even before the rivet is removed from the fire, by characteristic sparks. Using the electric method of heating, on account of the radiation of heat away from the surface or the chilling effect of the atmosphere, the color of the outside cannot be taken as representing the temperature of the rivet throughout. Unless this difference in temperature between the surface and interior of the rivet is taken

on breakage of rivets made at seven different shops, including locomotive, boiler, car and structural fabricators, showed two outstanding conditions in their practice which appeared to be the cause of the breakage. These conditions were high temperature of heating furnaces and

From a paper presented at a recent meeting of the American Institute of Steel Construction. Illustration courtesy of Iron Age.

into consideration, overheating will result.

GAS HEATING GENERALLY BETTER

The tendency with oil fuel is to use a high pressure air burner frequently connected directly with the line operating the rivet hammers. With an air pressure of 80 to 100 pounds per square inch it is difficult to maintain uniform combustion and constant and proper furnace temperature. It is common practice to employ a furnace of inadequate size, with the result that it must be run at 2,400° F. or over to provide for more rapid heating of rivets. When the furnace is of adequate size, often it is overloaded with rivets. In either case, any interruption of the work will result in overheating. A baffle wall, or muffle, seldom is provided between the burner and the rivets and the flame impinges directly on them with resulting harmful oxidation and overheating. Heating with gas fuel is generally better than with oil, coal or coke, due to the low pressure of air employed and the consequent easier control of the furnace temperature.

In commercial shop practice it is a difficult and slow process to fit structural members so that there will be close contact with no looseness or lost motion between the members to be riveted. Where there is no lost motion, the rivet will be subjected in driving to compression only. As soon as any looseness is present the rivet is subjected in driving to alternate compression and tension with their accompanying stresses. These stresses generally are termed vibration. The object of this investigation was to determine the separate and combined effect of high temperatures and stresses during riveting.

The testing device shown in Fig. 1 was made to determine the effect of opposed stresses in driving heated rivets. The device consists of a rectangular frame, or holder, in which is fitted a die made in half sections. These half sections are clamped together by means of a threaded bolt extending through the frame. Through the center of the die is a drilled hole, 13/16-inch diameter, for driving

3/4-inch rivets. At the left of the illustration is shown an end view of one of the half sections of the die. The die is made up of two 1-inch plates and two 5/8-inch arched spring steel plates riveted together, as shown in the illustration of the other half die section in the holder. The arch of the spring steel plates is 0.09 inch, or just slightly less than 3/32 inch. The function of the arch is to produce the opposed stresses in driving the rivet.

In conducting these tests, the two half sections of the die were clamped tightly together in the holder by means of the bolt. A 3/4 x 5-inch rivet was heated to the desired temperature and inserted in the central drilled hole of the die. Two air riveting hammers were used in driving. Action in the device during the driving was as follows: Each blow of the riveting hammer flattened the arched spring plates and at the same time, subjected the rivet to compression. Between blows the spring plates sprang back and subjected the rivet to tension. The result was rapid alternate compression and tension stresses. After the rivet was driven, the bolt was loosened, thereby effecting quickly the separation of the two half sections of the die and the removal of the rivet.

Rivets used in the investigation were heated by oil forge, gas forge, coke forge and electric rivet heater. The oil forge was built as a duplicate of one used at a shop where there was a serious breakage of rivets occurring. The hearth was 7 x 9 inches, air pressure 70 pounds, single burner inserted in end, no baffle so the flame impinged directly on the rivets. The flame temperature ranged from 2,300° to 2,700° F.

The gas forge was a furnace regularly used for forging work. The hearth was approximately five times as large as the oil furnace. The air pressure was low, not exceeding two pounds. There was a baffle wall between the burner and rivets. In these tests the furnace temperature could be easily controlled and ranged ap-

proximately the same as the oil furnace. The coke forge was of the ordinary portable type—hand blown. The electric rivet heater was of the type manufactured by the American Car & Foundry Co.

Two grades of steel were employed in making the investigation. One was A. S. M. E. boiler grade, 0.10 per cent carbon steel, and is designed as a type "B" and the other was high sulphur cut thread bolt grade 0.20 per cent carbon, steel, designed as type "D." Every rivet of each grade broke in driving when heated in the coke forge so as to emit sparks, or to what is commonly termed a "splitting heat." A certain percentage of rivets of both grades, heated by any method to temperatures approximately 2,000° F. or over, either broke in driving or failed to withstand a cold bend test 180 degrees flat after driving.

No rivet of either grade, heated to a temperature under approximately 2,000° F. failed in driving and invariably stood a cold bend test of 180 degrees flat after driving. By alternating one grade of steel with another, one rivet at a time in the oil furnace, so that heating conditions were duplicated as nearly as possible, it was observed that the cut thread bolt stock stood a higher temperature without failing in driving or subsequent bending, than the A. S. M. E. boiler grade, as shown in the following tabulation:

Number of rivets	High Sulphur cut thread bolt "D"	A. S. M. E. boiler "B"
Driven	22	18
Broke in Driving	2	14
Broke in Bending	10	2
Driven and Bent Satisfactorily	10	2

Similar results also were obtained using the gas forge and electric heater. In all cases where rivets broke in driving, their temperature was sufficiently high to show above visible color when removed from the die. Rivets which were broken in driving in the devices are shown in Fig. 1. The fractures are identical in character and appearance with those illustrating complaints as represented by sample F.

After having obtained these results it

was decided to extend the investigation to cover different grades of steel and to measure the driving temperatures of the rivets with an optical pyrometer. Consequently the following grades of steel were made up to $\frac{3}{4}$ x 5-inch rivets.

Grade of Steel	Ladle Analysis per cent Car- bon	Man- ganese	Phos- phorus	Sul- phur
A.S.M.E. boiler .....	.10	.33	0.11	.035
A.S.M.E. boiler .....	.11	.48	.014	.033
High manganese .....	.11	.60	.019	.034
Lloyds .....	.22	.46	.014	.045
High sulphur cut thread bolt .....	.20	.34	.017	.100

From these tests it was found that heating the rivets to 2,300° F. for three minutes and cooling in the air did not materially affect the physical properties, although a large increase in grain size occurred. Ten rivets of the same size used in these tests of the A.S.M.E. grade were heated to temperatures of 2,256° to 2,340° F. and driven in a die composed of two solid half sections. The results of tensile tests prepared from these rivets showed the physical properties were not materially affected.

It was found that for each grade of steel there was a critical driving temperature below which there was a slight increase in elastic limit and tensile strength, with ductility comparing favorably with that of the steel as rolled. When the critical temperature was exceeded, there was a decided falling off in the ductility, both the elongation and reduction of area decreasing with the increase in temperature. As the temperature was increased further, the result was breaking of the rivet in every case. Microscopic examination of two rivets broken in driving at two shops and representative of complaints, revealed intergranular rupture identical with ruptures produced in rivets driven at high temperatures in the device.

The critical temperatures of driving were consistently lower when oil was used for heating than when gas was used. The breakage in driving occurred at a lower temperature with the oil heated rivets. The gas heated rivets, although showing loss of ductility, did not actually break in driving until higher tempera-

tures were used. This may be accounted for by the oxidizing or "cutting" flame produced by the high air pressure of the oil burner.

Critical temperatures of driving for different grades were approximately as follows:

Serial	Grade	Temperature degrees Fahr.
"B"	A.S.M.E. boiler	1975
"A"	A.S.M.E. boiler	2060
"E"	High manganese	2125
"C"	Lloyds	2110
"D"	High sulphur cut thread bolt	2065

From this investigation the following conclusions are drawn:

1. High temperatures combined with alternate compression and tension, generally termed "vibration," are the cause of rivets breaking in hammer driving.

2. High temperature combined with alternate compression in tension, if not resulting in breaking in driving, destroy the physical properties to such an extent as to render rivets unfit for service.

3. Heating rivets to over 1,950° F. produces a structure which will not withstand rapid alternate compression and tension. These opposing stresses produce strains which result in intergranular weakness and rupture.

4. A rivet heated to 1,950° F. as a maximum limit and a sufficient time allowed for soaking will drive just as easily and fill the hole equally as well as a rivet heated to a much higher temperature.

5. A rivet which "runs," emits sparks or "spit" should never be driven.

6. For each grade of composition of rivet steel there is a critical temperature for driving which must not be exceeded or the result will be breakage, intergranular weakness and interior rupture.

7. The critical temperature increases consistently with the manganese content within the range covered by this investigation as shown by results with steels "B," "A" and "E," containing respectively 0.33, 0.48 and 0.60 per cent of manganese.

8. High sulphur, accompanied by high manganese, is not a cause of rivets breaking in driving. The critical driving temperature of grade "D" rivets with 0.10 per cent sulphur and 0.84 per cent manganese was higher than those of the A.S.M.E. boiler grades "B" and "A" containing 0.035 and 0.033 per cent sulphur respectively.

This Thing Public Relations

(Continued from page 605)

It so often happens that the "visiting speaker" misses his train, or is taken suddenly ill, and organizations are put to it to find a "pinch hitter." The gas man who qualifies for this office finds himself fairly busy.

This may seem, and probably is, an odd story about public relations, but I would rather welcome the visiting firemen that answer opposing counsel in a rate case.

During the war period, when an increase in rates was necessary, our customers petitioned the commission to give us relief.

I have read and I have listened to many references to this elusive subject called public relations, and I am wondering if after all it is not simply a question of giving good service at fair rates and being really a part of that public yourself.

REGARDING REPRINTS

ONCE AGAIN we wish to remind our contributors and readers that reprints of any material published in the American Gas Association MONTHLY may be obtained in accordance with the following scale:

100 copies, 1 page	\$2.00
Additional 100's	.40
100 copies, 2 pages	3.00
Additional 100's	.40
100 copies, 4 pages	7.00
Additional 100's	.75
100 copies, 8 pages	10.75
Additional 100's	1.05

COMMERCIAL SECTION

ROBERT J. CANNIFF, Chairman

J. W. WEST, Jr., Secretary

J. J. BURNS, Vice-Chairman

The Modern Home Comes Into Its Own

Blue Star Gas Installation Now Going Into Many Exhibition Homes Throughout the Country

ALARGE part of the Commercial Section's activities during the present year have been devoted to the inauguration of the Blue Star Plan both in the large cities covered by the demonstration home program of the Home Owners Service Institute and in the territory of the other gas companies to whom the Blue Star Plan has been presented by the Association itself.

The last two months have shown substantial results as a consequence of the preliminary work done during the spring season, and to date in thirteen cities arrangements have been made for the construction of Blue Star Homes. Many of these homes are already under construction and others will follow in the next few months.

At the time of going to press the list of cities is as follows:—

Boston, Mass.—2 homes
Oak Hill Village, Newton Center, Mass.
Tamworth Hill, Wakefield, Mass.
New York, N. Y.—3 homes
Westfield, N. J.
Wantaugh, L. I.
Pittsburgh, Pa.
Detroit, Mich.
Cleveland, Ohio
Buffalo, N. Y.
San Antonio, Texas
Houston, Texas
Fort Worth, Texas
Aurora, Illinois
Lowell, Mass.
Muncie, Ind.
Evanston, Ill.

More than twenty additional companies

To demonstrate how beautiful, how comfortable, how well equipped—yet how economical a really modern home can be

Three of Lowell's Foremost Organizations Co-operate in the Construction of a Most Unusual House

Unusual in many features at its erection—unusual in the beauty of its furnishing—unusual in its wealth of gas service appliances

The Highland Realty Associates

are now building on Lake Street in Boston, a new home which will be known as the "Blue Star Home Beautiful." Complete modern home in operation of plumbing equipment in which and which the most, also the most complete of modern plumbing in which, no matter how small and how a corner and in the corner of the city. They are aimed to support the public and progress of the work.

The Lowell Gas Light Company

"It is the "Blue Star Home Beautiful" with advance the most and complete and with all the modern appliances for the use of the city in the corner of the city. The Lowell Gas Light Company is the most complete of modern plumbing in which, no matter how small and how a corner and in the corner of the city. They are aimed to support the public and progress of the work.

and Robertson's

"It is the "Blue Star Home Beautiful" with advance the most and complete and with all the modern appliances for the use of the city in the corner of the city. The Lowell Gas Light Company is the most complete of modern plumbing in which, no matter how small and how a corner and in the corner of the city. They are aimed to support the public and progress of the work.

How to Get There

"It is the "Blue Star Home Beautiful" with advance the most and complete and with all the modern appliances for the use of the city in the corner of the city. The Lowell Gas Light Company is the most complete of modern plumbing in which, no matter how small and how a corner and in the corner of the city. They are aimed to support the public and progress of the work.

You Are Invited

"It is the "Blue Star Home Beautiful" with advance the most and complete and with all the modern appliances for the use of the city in the corner of the city. The Lowell Gas Light Company is the most complete of modern plumbing in which, no matter how small and how a corner and in the corner of the city. They are aimed to support the public and progress of the work.

How the Lowell Gas Light Company popularizes the modern home

are planning to begin operation of the plan at an early date.

Probably the first demonstration gas home to carry the official Blue Star Poster will be the house now being erected at Lowell, Massachusetts, under the auspices of the Lowell Gas Light Company, which will be put on exhibition the week of October 11th. A detailed description of this home is given on the next page.

At the 34th annual convention of the Pacific Coast Gas Association held at Pasadena, California, during the week of

August 23, the Association went on record as officially approving the Blue Star Plan, particularly the feature of the program looking toward the sale of quality gas appliances. Marked interest was shown by the company men present and it

appears probable that several companies will adopt the plan for operation during the coming winter in that territory where weather conditions are more favorable than in many other sections of the country for demonstrating homes.

The Blue Star House in Lowell, Mass.

By CHAS. H. O'DONNELL

Industrial Engineer, Lowell Gas Light Co., Lowell, Mass.

THE idea of a modern insulated and gas-equipped home originated with the manager of the Lowell Gas Light Company, John L. Eigenbrot, some time ago and this idea was made public at a meeting of the Lowell Contractor's Association. The idea was received with a great deal of enthusiasm with the result that the Highland Realty Associates (an up-to-date realty and builder organization of Lowell) agreed to co-operate with the Lowell Gas Light Company in the building of a Blue Star Home.

It might be well to mention briefly the Highland Realty Associates. This concern has developed and built up property in the best residential districts of this city and are now building their sixty-sixth house. They have been very successful in their work and have succeeded in building up a very fine reputation. Practically all of their houses are of the colonial design and contain either six or seven rooms. This size and type of home has proved to be the popular house for this vicinity and is a great deal more in demand than eight to ten room houses.

Now for the plan and agreement: The Highland Realty Associates agreed to build a house using one of their plans (which was subject to minor changes by the gas company) insulated with cork-board and containing standard gas equipment to go with the house as follows: gas-fired house heating boiler, one radiant-fire, one automatic water heater, and a gas range. The house will be furnished for exhibition by the Robertson Furni-

A Most Unusual House!



—the 66th home built by the Highland Realty Associates.
 —Equipped with gas appliances by the Lowell Gas Light Company.
 —to be furnished by Robertson's.

Read About it on Page 9

Another piece of newspaper copy used by the Lowell Company

ture Company of Lowell and the exhibition will last for a month. There will be other gas equipment, such as clothes dryer, incinerator, and refrigerator exhibited in this house at the same time.

The advertising to be taken care of by the mutual co-operation of Highland Realty Associates, Lowell Gas Light Company, and Robertson's Furniture Company.

The main feature of the idea is to show a modern home rather than a model home.

As stated above, the house will be open for exhibition on October 12th and will be open for one month. It is expected that somewhere in the vicinity of 12,000 people will inspect this house. The Highland Realty Associates, the Lowell Gas Light Company, and the Robertson Furniture Company feel confident that the results will greatly exceed their expectations.

TECHNICAL SECTION

JOSEPH P. HAFTENKAMP, Chairman
H. W. HARTMAN, Secretary

WALTER C. BECKJORD, Vice-Chairman

High Pressure Gas in Balmy, Palmy Panama

Describing an Interesting Job That Has Resulted in
Business From the U. S. Army Posts

By PAUL VECKER

Vice-President, Panama-Colon Gas Co.

THE Panama and the Colon Gas Companies began operations in the cities of Panama and Colon respectively during July, 1917,—both cities being supplied with gas service through low pressure distribution systems. During the year 1921 the two companies were consolidated into the Panama-Colon Gas Company and the following year the company extended its radius into the Panama Canal Zone, supplying the townships of Ancon, Balboa and Cristobal with gas service. Subsequently, the company extended its gas service to Calidonia, Exposition Grounds and Bella Vista, residential suburbs of Panama City, as well as the various neighboring United States Army and Navy Military Reservations which are located in the Panama Canal Zone, namely: Fort Amador, Quarry Heights, Naval Radio Station and Fort De Lesseps. All these extensions were supplied through low pressure distribution systems.

Last year the company entered into contracts with the United States Government for supplying certain outlying Army and Navy Military Reservations on the Atlantic side of the Panama Canal with gas service. These military posts are Fort Davis, France Field, Coco Solo and Fort Randolph. The distance of these posts from the city of Colon was such that it was decided not to attempt to supply these posts through a continuation of our low pressure distribution system, but rather, to serve them through a high pressure distribution system.

Considerable thought was given to the manner of laying the high pressure line,

as a part of this line had to be run along the right of way paralleling the Panama Railroad Company's tracks. Furthermore, the advantages of laying the pipe exposed on concrete supports were also taken into consideration at certain points where the lien ran through remade marsh land. Questions of high humidity, undue expansion because of tropical conditions and the action of salt air from neighboring marshes had to be considered.

Standard four-inch steel pipe supplied in forty-foot lengths with the ends bevelled for welding was used. On arrival, the pipe was thoroughly wired and brushed and given two coats of protective pipe paint, the first being a thin priming coat and the second a heavy bituminous coat. Both coats had an asphalt base. As the coatings were put on, about six inches at each end of the pipe was left free so as not to interfere with the welding.

It was finally decided to lay all pipe under ground, a standard U bend pipe being used at an average of every two thousand feet. After our proposed line had been staked out and the necessary rights of way had been secured, a large force of men were put to work opening up the ditch. The pipe was then strung along the ditch and the actual work of welding started. This work created considerable interest among local engineers and contractors, since it was the first welded pipe that had ever been laid on the Isthmus of Panama.

The oxygen and acetylene was procured from the Mechanical Shops of the Panama Canal. A welder was developed

from a man who had had a little previous experience in pipe welding. To obviate the necessity of numerous bell holes, the pipe was welded on top of the ground, as many as fourteen lengths being welded together and then welded on to the main line. By following this method it was possible to have men with chain tongs roll the pipe as it was being welded, thereby insuring a perfect job and making it easier for the welder.

The pipe was tested daily with one hundred pounds of air. To have a proper check on the tests, a double inspection was made. The pipe tested one day was lowered into the ditch and then tested again after lowering. Soap suds were applied to all welded joints while the pipe was under pressure. In addition to this soap suds test, the line was pumped up at night, pressures taken, and these pressures checked in the morning before the air was released. By having a flange fitted with a gate valve tacked on the end and the pressure released through this valve, all scale as well as other particles of foreign substance which might have been left in the pipe were blown out. Very little waste material was found in the pipe as a swab was run through each length previous to its being placed in position for welding. After the pipe had been welded and tested, the welds and ends of the pipe were painted and coated and all abrasions to the original coating which the pipe might have suffered in handling were touched up.

At the entrance to each Army and Navy Reservation low pressure regulating governors were installed as well as master station meters. Each post is served with a low pressure distribution system, cast iron pipe being used for this purpose.

Two compressors were installed at the gas plant, one a duplex steam compressor and the other an internal combustion engine of the Diesel oil type. We were influenced in using two compressors each of a different type because of our peculiar fuel conditions. We manufacture an oil gas having as residuals both tar and lamp-

black. These we use as our boiler fuel. Whenever we have a surplus of boiler fuel, we use our steam compressor; otherwise, we revert to our Diesel oil compressor. Two compression tanks were installed and fifty pounds pressure carried in these tanks for storage. Regulators were installed which reduce the pressure on the main line to five pounds and at the entrance to each post the pressure is again reduced to six inches water column, which is the pressure carried in the individual post distribution systems.

Our contracts with the United States Government also called for supplying and installing the various gas appliances. We installed a total of sixty-one sections of heavy duty hotel ranges, one hundred ninety-one domestic ranges, one hundred ninety-two laundry stoves and two hundred and six water heaters. These contracts have added several million cubic feet of gas per month to our Colon division's load. Furthermore, each of these military posts have their shops and we are now working on possible industrial business.

Within the last month we have signed contracts with the United States Government which will necessitate the installation of a high pressure distribution system by the Panama Division of our company for supplying gas service to certain outlying army posts on the Pacific side of the Panama Canal. These new contracts, following so closely on the completion of the extension of our gas service to the outlying Atlantic side Military Reservations, are positive proof that our company has fully complied with all previous contracts made with the American Government and that our service is giving entire satisfaction to the Army Authorities.

The construction work outlined in this article was carried out under the supervision of Clarence Cope, manager of the Colon Division and R. A. Pearson, superintendent of distribution of the Colon Division. These two men with the welder were the only Americans on the job.

Associations Affiliated with A. G. A.

K. R. Boyes, Secretary, Relations with Affiliated Associations

Canadian Gas Association

Date of Affiliation—Mar. 25, 1919.
Pres.—J. J. Armstrong, Consumers Gas Co., Toronto, Ont.
Sec.-Tr.—G. W. Allen, 7 Astley Avenue, Toronto, Ont., 1927.

Empire State Gas and Electric Association

Date of Affiliation—Nov. 21, 1919.
Pres.—E. C. Scobell, Rochester Gas & Electric Corp., Rochester, N. Y.
Chairman Gas Section—J. E. Cooper, Utica Gas & Electric Co., Utica, N. Y.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.
Conv., Lake Placid Club, Lake Placid, N. Y., Oct. 4 and 5, 1926.

Illinois Gas Association

Date of Affiliation—Mar. 19, 1919.
Pres.—W. A. Bertke, Illinois Power & Light Corp., East St. Louis, Ill.
Sec.-Tr.—R. V. Prather, 305 Illinois Mine Workers Bldg., Springfield, Ill.
Conv., 1927.

Indiana Gas Association

Date of Affiliation—April 24, 1919.
Pres.—E. Van Aradel, 1100 J. F. Wild Bldg., Indianapolis, Ind.
Sec.-Tr.—E. J. Burke, Room 1314, Peoples Gas Bldg., Chicago, Ill.
Conv., 1927.

Michigan Gas Association

Date of Affiliation—Sept. 18, 1919.
Pres.—C. R. Henderson, Washtenaw Gas Co., Ann Arbor, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., 1927.

Mid West Association

Date of Affiliation—May 21, 1919.
Pres.—Frank S. Edge, Peoples Light & Fuel Co., Grinnell, Iowa.
Sec.-Tr.—H. R. Sterrett, 551 Seventh St., Des Moines, Ia.
Conv., St. Paul, Minn., April, 1927.

Missouri Association of Public Utilities

Date of Affiliation—June 18, 1920.
Pres.—F. S. Dewey, Kansas City Power and Light Co., Kansas City, Mo.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th St., St. Louis, Mo.
Conv., 1927.

New England Gas Association

Pres.—F. C. Freeman, Providence Gas Co., Providence, R. I.
Pres. Operating Div.—G. Warren Stiles, Portland Gas Light Co., Portland, Me.
Sec.-Treas. Operating Div.—F. E. Drake, Lynn Gas & Electric Co., Lynn, Mass.

Pres. Sales Div.—M. B. Webber, Marlboro-Hudson Gas Co., Boston, Mass.
Sec.-Treas. Sales Div.—J. H. Sumner, 719 Massachusetts Ave., Cambridge, Mass.
Pres. Industrial Div.—R. J. Phelan, Worcester Gas Light Co., Worcester, Mass.
Sec.-Treas. Industrial Div.—J. J. Winn, Jr., Fall River Gas Works Co., Fall River, Mass.
Conv., 1927.

New Jersey Gas Association

Date of Affiliation—April 25, 1919.
Pres.—L. N. Yetter, Atlantic City Gas Co., Atlantic City, N. J.
Sec.-Tr.—Louis Stoecker, Public Service Electric & Gas Co., Newark, N. J.
Conv., Bellevue-Stratford Hotel, Philadelphia, Pa., April 13, 1927.

Oklahoma Utilities Association

Date of Affiliation—September 16, 1925.
Pres.—J. A. Frates, Oklahoma Union Railway Co., Tulsa, Okla.
Mgr.—E. T. McKay, Oklahoma City, Okla.
Conv., 1927.

Pacific Coast Gas Association

Date of Affiliation—Sept. 18, 1919.
Pres.—W. S. Yard, Pacific Gas & Electric Co., San Francisco, Calif.
Exec. Sec.—Clifford Johnstone, 447 Sutter St., San Francisco, Calif.
Conv., 1927.

Pennsylvania Gas Association

Date of Affiliation—April 10, 1919.
Pres.—Allyn C. Taylor, Consumers Gas Co., Reading, Pa.
Sec.-Tr.—Geo. L. Cullen, Harrisburg Gas Co., Harrisburg, Pa.
Conv., Bellevue-Stratford Hotel, Philadelphia, Pa., April 13, 1927.

Southern Gas Association

Date of Affiliation—May 20, 1919.
Pres.—A. E. Merchant, New Orleans Public Service, Inc., New Orleans, La.
Sec.-Tr.—J. P. Connolly, 141 Meeting St., Charleston, S. C.
Conv., Atlanta, Ga., April 19, 20, 21, & 22, 1927.

Southwestern Public Service Association

Date of Affiliation—September 26, 1923.
Pres.—H. E. Borton, Mineral Wells Electric Co., Dallas, Texas.
Chairman Gas Section—C. K. Fletcher, Fort Worth Gas Co., Fort Worth, Texas.
Sec.—E. N. Willis, 403 Slaughter Bldg., Dallas, Texas.
Conv., 1927.

Wisconsin Utilities Association

Date of Affiliation—March 25, 1919.
Pres.—John St. John, Madison Gas & Electric Co., Madison, Wisc.
Exec.-Sec.—J. N. Cadby, 445 Washington Bldg., Madison, Wisc.
Conv., 1927.

Geographic Divisions

Eastern States Gas Conference

Date of Formation—April 11, 1923.
Pres.—S. P. Curtis, American Gas Co., Philadelphia, Pa.

Sec.-Tr.—J. C. Smith, Consumers Gas Co., Reading, Pa.
Conv., Bellevue-Stratford Hotel, Philadelphia, Pa., April 14 & 15, 1927.

Employment Bureau

(Address All Communications to Key Number)

SERVICES REQUIRED

ENGINEER—Large operating company desires the services of an engineer with experience in the application of gas and the selling of industrial gas appliances. State age, past experience and salary expected. Address A. G. A.

Key No. 072.

WANTED by large gas company in middle west, salesman for industrial gas appliances. Address A. G. A.

Key No. 073.

WANTED—A fast growing Gas Syndicate operating a number of Gas Companies desires the services of an experienced gas appliance solicitor. Only trained and experienced men with good references need apply. A good opportunity for a live, wide-awake salesman. Address A. G. A.

Key No. 079.

SALESMEN—Large Public Utility Company operating in Central New York and many other states, desires to employ several securities salesmen to sell company securities. Excellent opportunity. State salary, age, experience, married or single. Address A. G. A.

Key No. 080.

GAS ENGINEER, technically educated in fundamentals of chemistry and mechanical engineering, with some knowledge of civil and electrical engineering and familiarity with business economics, having three to ten years, preferably in design and construction of coal and water gas plants and high and low pressure distribution system. Capable of handling operating and construction problems for system of several gas properties. Permanent position. Location, New York State. In replying, please give full details of education, experience, salary desired, availability and small photograph. Address A. G. A.

Key No. 084.

INDUSTRIAL GAS SALES REPRESENTATIVE: Gas company in a Middle Atlantic State has an opening for a technical college graduate, with fundamental knowledge of application and combustion of various fuels, to sell gas for industrial uses. Must be capable of making plant surveys of heat applications. State age, education, experience and salary desired. Address A. G. A.

Key No. 085.

SALESMEN: Medium-sized Public Utility Operating Company located near New York City has opening for one gas appliance salesman, and two securities salesmen to sell gas company securities direct to consumers. State salary, age, experience, and married or single. Address A. G. A.

Key No. 086.

INDUSTRIAL GAS SALESMAN—Must have sufficient engineering experience and ability to make estimates, recommendations and demonstrations; and also must have that quality of salesmanship which can bring about the signing of contracts. Company operates in a city of approximately 200,000 inhabitants. Address A. G. A.

Key No. 088.

A NEW GAS APPLIANCE COMPANY desires to employ Gas Appliance Salesman who has had considerable experience in selling Water Heaters, boilers, etc. State age, salary expected, experience. Address A. G. A.

Key No. 089.

INDUSTRIAL GAS SALESMAN with two or more years' experience with various industrial applications to join Gas Company industrial sales force with good opportunity to develop into supervisory position. Address A. G. A.

Key No. 090.

SALESMAN—Chiefly for gas-fired steam radiators, also other gas appliances to work in New York City. One acquainted with plumbing and heating trade preferred. Salary and commission basis. Address A. G. A.

Key No. 091.

A PROGRESSIVE Gas Company in Mass. has an opening in its Industrial Gas Engineering Department for a Technical College Graduate to sell gas for industrial uses. State age, education, experience, and salary desired. A fine opportunity for the right young man. Address A. G. A.

Key No. 095.

WATER HEATER SALESMAN with experience with various installations to join Gas Company sales force with good opportunity for development. Address A. G. A.

Key No. 096.

SHOP FOREMAN—Wanted by Company operating in the Metropolitan District of New York City. 25,000 Meters. Must be thoroughly familiar with all classes of work on consumers' premises, industrial appliances, routing and transportation. Give age, experience and compensation desired. References will be considered confidential if requested. Address A. G. A.

Key No. 097.

SERVICES OFFERED

WANTED—Am open for position as appliance salesman with appliance manufacturer, experience covers over fifteen years in the sale of granges, automatic water heater and heating appliances, or as manager of appliance sales department with a gas operating company, experience includes executive and technical training. Married. All references. Address A. G. A.

Key No. 205.

WANTED—Position as Gas Engineer or Superintendent of property serving 30,000 or more meters. Fifteen years' experience in high and low pressure distribution, coal and water gas production. Address A. G. A.

Key No. 211.

EXECUTIVE—technically trained engineer, experienced in coal and water gas manufacture, high and low pressure distribution, electrical generation and distribution, purchasing, handling of securities, with sales experience, etc., desires a position of responsibility. He is at present employed, 33 years old, married and can leave on comparatively short notice. Has the best of references and will go anywhere. Has broad experience and can show increased gross and net earnings. Address A. G. A.

Key No. 215.

YOUNG MARRIED MAN—Thirty-one years old. Thoroughly experienced in every phase of selling Gas and Electric merchandise through Public Service companies by the Meter-Reader-Salesman plan of selling, desires position with Public Utility Company. Can make a real success of your merchandising department under this plan. Have also had three years' road experience selling electrical merchandise, organizing sales crews for dealers, etc. Available about September 15 or October 1st. Address A. G. A.

Key No. 216.

TECHNICAL MAN now employed as superintendent and industrial gas engineer desires new location. Thirty-six years of age. Fourteen years' experience in coal and water gas manufacture, sales and distribution. Services available upon reasonable notice to present employer. Address A. G. A.

Key No. 217.

MANAGER OF GAS PROPERTY—with twenty-five years experience in all branches of business, specialist in building up small companies, desires to make change in position. Address A. G. A.

Key No. 218.

GAS SALES ENGINEER of wide training and experience, desires to secure new connection in a company desirous of securing the utmost in Domestic-Commercial and Industrial Development. Can organize and train men to an unusual degree of efficiency. Will undertake successful surveys and uncover potential sources of revenue. Conversant with engineering and rate research. Address A. G. A.

Key No. 219.

AGGRESSIVE COMMERCIAL MANAGER—34 years of age, available October or November. Thoroughly familiar, Industrial, Commercial and Domestic Sales Promotion. Address A. G. A.

Key No. 220.

COMBUSTION SALES ENGINEER with executive ability to organize and operate an efficient industrial sales department, capable of putting over large industrial operations. Thorough knowledge of solid, liquid and gaseous fuels from a practical and theoretical standpoint, having made surveys in over one thousand industries during the past seventeen years of industrial plant engineering. Broad experience in a very extensive variety of heating operations including the design of large heating furnaces and gas burner equipment. Also contributed a great deal to the development of house-heating, able to create splendid public relations. Technical graduate. High class references. Address A. G. A.

Key No. 221.

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*Died September 8, 1926

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